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Gleanings in Bee Culture

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The mighty Peace River near Alaska Highway crossing in northern British Columbia. The author and the District Agriculturist, T. S. Crack, looking over beekeeping interests.

Handling Package Bees in Alberta

By W. G. le Maistre
Provincial Apiarist for Alberta, Canada

[This article would seem timely for beekeepers in the North, especially those in North Western Canada and the U. S. A.—Editor.]

To properly understand the handling of bees, it is necessary to know something of the climate and flora of the area where the bees are to be kept. Alberta presents a great variety of conditions; indeed, what country does not? To generalize, however, it is safe to say that there is usually a brief spring period during April when willows yield pollen and nectar. During this period the weather is often not suitable for bee flight and this source of food is unreliable. Willows of various species continue to bloom and yield intermittently well into June. Any time after the first week of May, dandelions appear in great quantities lasting about two or three weeks but, again at this time, the weather may be uncertain and colonies seldom store any surplus honey from them and sometimes fail to benefit at all.

The latter part of May and first two or three weeks of June are often wet and though white Dutch clover followed by alsike appear early in June there is never more than a maintenance flow, and sometimes not even that until after the middle of the month. The main honey flow begins in southern Alberta about June 17th, and in northern Alberta about June 25th. A secondary flow may occur in August lasting till mid-September but it is seldom of much significance. The main honey flow period lasts five or six weeks at the most. It is only intense for a few days during this time.

The beekeeper in Alberta, therefore, must bend his energies to obtaining a maximum colony population and maintain it for the period between June 15 and July 25.

Most commercial beekeepers in Alberta kill their bees in the fall because of high winter losses. About 80 per cent of the colonies are es-

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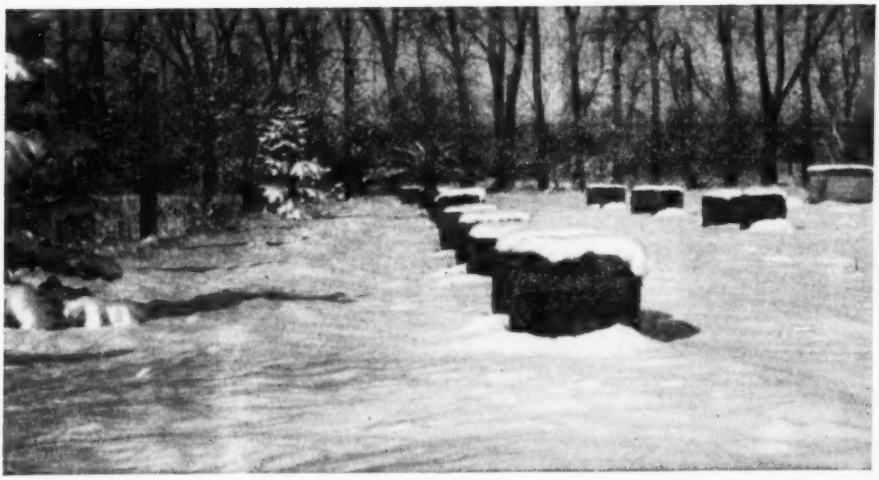


Dominion Experimental Station at Lethbridge in southern Alberta. This is an irrigated area - note the tree growth. Outside irrigation there are no trees.

tablished afresh each spring from package bees. These are generally ordered to arrive between the middle of April and May 1st. They could be brought in any time in April but should not be brought in after May 5. Where possible, the hives are kept in a heated building until very shortly before setting them out for the package. Cold hives, cold honey, cold combs on a cold day have not much to commend them to bees that were comfortably clustered in the package.

There are a few essentials to be looked after by the beekeeper if really good results are to be obtained. It is only the man who attends to these details that will produce the best possible results.

GOOD QUEEN. Here is a situation over which the recipient of the package has very little control. He usually tries out the bees from different breeders until he obtains the best results and then he stays with that breeder. Some commercial men will select the queens from particularly high producing hives and send them to their suppliers as breeders before they kill the bees in the fall. There is probably a gap between the man who breeds the bees and the man who uses them. A good deal might be done to obtain considerable improvement in stock suitable for northern conditions by closer cooperation in this matter.

AMPLE FOOD. Pollen and honey or sugar syrup must be supplied in abundance if the colony is to increase sufficiently to reach productive strength.

In an average season it is necessary to supply a colony with about 30 pounds of feed—honey or sugar syrup. The sugar syrup is usually made either half sugar and half water, or one third sugar and two thirds water. Where honey combs are put in the brood chamber the light syrup probably produces just as good results as the heavier. Given favorable spring weather, less than thirty pounds may suffice. It is extremely unlikely that bees are ever fed too much.

Pollen substitutes or sufficient reserves of pollen are not commonly used. Most packages are given two or three combs of pollen and expected to fend for themselves. There is no doubt that quite often pollen has been a limiting factor in colony development. **During periods of inclement weather, pollen as well as syrup ought to be fed unstintingly.**

WARMTH. It is now well recognised that the proper incubation temperatures for the brood of the honeybee is in the neighborhood of 95° Fahr. Outside temperatures in the spring are more likely to be around 50° Fahr., or less most of the time. The difference in temperature must be made up by the bees themselves.

It is obviously very beneficial to assist the bees in maintaining proper brood-rearing temperatures. There

are a few details, that if attended to, will pay dividends in producing more bees. Windbreaks, good tree shelters, especially if of willows which also provide food, are a great help. Artificial windbreaks of slatted fencing are some help and very much better than nothing at all. Wrapping hives with a single sheet of black paper is a considerable help in Alberta. Though the winds may be cool, the sun shines with considerable warmth. The black paper absorbs heat and is quite a factor in raising the hive temperature on sunny days. Furthermore, it helps break the wind on the hives, which is particularly important if supers are ill-fitting and have cracks between them.

Bees should not be installed in cold hives if it can be avoided. Hives that are unoccupied by bees soon cool off when set out in the spring and if they have combs of honey in them, this cold honey takes a deal of heating before the bees can raise the hive temperature high enough to be active in it.

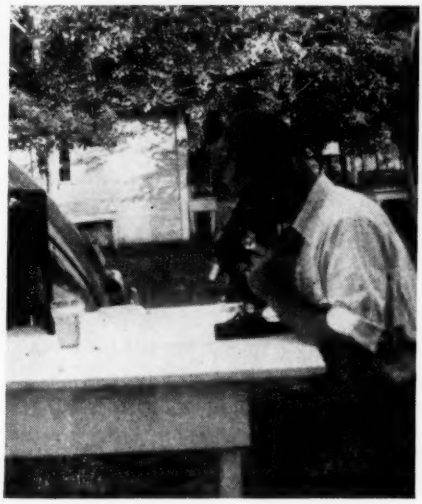
Preparation of Hives and Bees

A variety of methods are used in installing packages in hives. There seems to be an equal degree of success in the different methods employed. Prior to the arrival of packages, hives are prepared with combs containing 20 to 30 pounds of honey saved from the previous year's crop, two or three pollen combs and one or two empty combs, entrance blocks, some kind of inner cover, an empty super, and an 8-lb. feed can full of sugar syrup. On receipt of the packages, the bees are fed liberally by spraying or painting the sides of the screens with a thin sugar syrup. This is done till the bees are well gorged. They are then stored in a cool place, about 60° Fahr., to settle down.

If the weather is cool, the bees are installed any time during the day. If it be warm and bright during the day, introduction is delayed until evening. It is considered undesirable to have much flight when installing packages.

Installing Packages

FIRST METHOD. This method is as described in Gleanings, April, 1943. Packages are placed one behind each prepared hive. The four center combs are removed from each hive and leaned against its side. The beekeeper then gives the package a sharp jar on the ground shaking the cluster of bees on to the bottom of the package. The feed can and queen cage are quickly removed and set to one side. The bees are shaken and jarred out of the package through the hole that had been occupied by the feed can into the space in the hive previously occupied by the four center combs. The queen in her cage is sprinkled with a little syrup, the screen torn off her cage and she, too, is shaken out onto the pile of bees. A little syrup is sprinkled on the bees from the feed can. Soon the bees flow across the bottom board and up the combs. The four center combs are gently replaced in the hive, the inner cover or cloth and feeder are put over the frames, and the empty super and lid placed on the hive. (Some operators prefer to remove the side screen of the package to shaking the bees out through the feed can hole.)



The author looking for A. F. B. Records show only .54% of all hives in Province of Alberta had A. F. B. in 1943. All infected hives are burnt.

We have been using this method for several years and find it satisfactory. Though the actual installation may be a little slower than when the package is left in the hive for the bees to crawl out, it saves time in the long run because it saves a second visit to check queen cages and remove packages. The newly installed colony does not have to be disturbed at all.

Typical location in northern Alberta. Poplar and willow bluff. This is part of a 160 colony apiary belonging to Sicotte and Lauze, Falher, 50 miles from Peace River Town.

SECOND METHOD. This method is recommended for less experienced beekeepers because there is less disturbance of the bees and less danger of something happening to cause excitement. The beginner with his first hive is likely to be a little timid and with too many bees flying around his head could easily make a mistake that would prove disastrous to the colony. Some commercial men use it because shipments may arrive in large lots and all the packages must be put into hives without delay.

The hive is set up as in the previous method but with five combs at one side removed, and left for convenience in the super. The bees are jarred to the bottom of the package and the feed can and queen cage removed. A match is pushed through the candy of the queen cage which is then hung, candy end upwards, between two combs, in the hive. A handful or so of bees are poured out of the package over the queen cage and the package placed in the space beside the combs in the brood chamber. The inner cover or cloth and feed can are put in place. The super with the five extra combs and the lid are put on the hive.

Next day the empty packages are quietly removed and the brood chamber filled up to ten combs. The queen is generally out of the queen cage by this time, so it, too, is removed. The hive cover is replaced and the colony is left severely alone for one or two weeks. If the package is being housed on foundation or empty combs, feed cans are replenished as often as necessary with as little disturbance to the colony as possible.

From one to two weeks after the bees have been introduced to their hives, it is assumed they are sufficiently well established to permit the apiarist to examine them without disorganizing them or causing them to ball their queens. On a warm day, and using very little or no smoke, one or two combs are raised enough to see that they contain eggs or young larvae. Satisfied that the queen is at work, no further interference is necessary. Colonies found to be queenless are united immediately using the newspaper method. Normally, two or three per cent are thus treated, though, during the last two years, this per cent has risen higher.

From this period on it is a colony with which the beekeeper is dealing.

Edmonton, Alberta.

WHY SHORTAGE OF POLLEN

Beekeepers in some sections of the country, especially the plains area, report a shortage of pollen at certain times of the year. This shortage is not so likely to occur in wooded regions where pollen plants are more abundant. Furthermore, populous colonies in two-story brood chambers, with an abundance of honey are more likely to have an adequate amount of pollen than are less populous colonies in single-story hives. In other words, good beekeeping practices help to insure having a normal amount of pollen in the hives.

In nature, bees are found in hollow trees or crevices of rocks, distributed over any given area, with the colonies some distance apart. Such colonies would likely have an adequate amount of pollen, under normal conditions.

On the other hand, where man has intervened and is keeping bees in modern hives in commercial apiaries, with from 50 to 100 colonies in each apiary, there may not be enough pollen available, in all cases, for this heavy concentration of bees and this may account for a shortage of pollen in some areas. If such is the case, this would seem to be a reason for small or moderate sized rather than large apiaries.

Where pollen is known to be scarce, pollen substitutes should be fed to maintain normal hive population for the major honey flow.

The Effects of Some Insecticidal and Fungicidal Dusts on Bees*

By F. R. Shaw and A. I. Bourne

In tests conducted during the summer and fall of 1943, some data relative to the toxicity of certain dusts were obtained. The materials used as dusts are ones that are being used in the field at the present time. To the writer's knowledge, data on these materials, as regards their toxicity to bees, have been lacking.

The materials used in the experiments included the following.

1. Corn borer dust containing 1 per cent rotenone.
2. Corn borer dust containing 4 per cent nicotine.
3. A pyrethrum dust containing a 4 per cent petroleum solution of pyrethrins.
4. A dinitro-phenol dust used primarily in the summer application for control of European red mite.
5. A 300-mesh sulfur dust.

The procedure adopted in making these tests was as follows: Frames of bees were removed from one colony, and were shaken into a hive cover. A sample of bees was placed in a small wire and wood cage and dusted. Then they were placed in a clean cage and provided with water and sugar syrup. Observations were taken at the end of one, three, and 24 hours. Following the first 24 hours, observations were made daily. The dead bees were counted and removed each day.

The data obtained show in Table I. Daily counts of the number of dead and living bees are recorded.

It is not considered necessary to present the remainder of the data in tabular form. The dinitro dust-treated bees were not all dead until the 28th day following treatment. The check bees survived for 33 days.

Discussion. Of the various materials tested, only two seemed to cause immediate heavy mortality. Both the rotenone and the pyrethrum dusts caused 100 per cent mortality within 24 hours. The third most toxic material was the nicotine corn borer dust. This produced 100 per cent mortality within 4 days.

Of the remaining treatments, the sulfur treatments caused 100 per cent mortality within 10 days, the dinitro dust within 28 days and the check bees lived for 33 days.

Conclusion. It is apparent from the data taken above that both the rotenone and the pyrethrum dusts used in this experiment did produce heavy mortality among bees. The nicotine dust, while slower in its action, did cause heavy mortality. Sulfur dust produced a mortality of 100 per cent in 10 days. This treatment therefore reduced the longevity of the bees by about 67 per cent. Such a reduction in bee activity could result in a considerable loss of the honey crop if poisoning were sufficiently prevalent. The dinitro dust apparently did not offer any serious problem to bees. This is especially desirable since the material would be applied during the active growing season when dust applications might drift to other plants being worked by bees.

* Contribution from Dept. of Entomology, Massachusetts State College, Amherst, Massachusetts.

TABLE I

Relative Toxicity of Various Insecticides to Honeybees

No. hrs.	Rot'ne corn borer dust		Nic. corn borer dust		Pyreth. dust		Dinitro-phenol dust		300-mesh sulfur dust		Check	
	Number of Bees											
	Alive	Dead	Alive	Dead	Alive	Dead	Alive	Dead	Alive	Dead	Alive	Dead
24	0	213	97	2	0	85	143	17	90	0	148	0
48			35	64			142	18	88	2	148	0
72			9	90			141	19	82	8	148	0
96			0	99			141	19	57	33	148	0
120							138	22	40	50	148	0
144							136	24	25	65	148	0
168							134	26	10	80	148	0
192							132	28	2	88	148	0
216							129	31	2	88	144	4
240							125	35	0	90	136	12
264							122	38			136	12
288							115	45			132	16
312							114	46			130	18
336							106	54			127	21
360							100	60			120	28

Pollination in New Jersey

Getting Quadruple Service Out of Bees

By Milton H. Stricker

Manager Barclay Apiaries, Maple Shade, N. J.

When speaking of our pollination activities, it is in order to go back into our history and see why we began to rent bees for pollination instead of raising queens or producing honey.

The "Barclay Apiaries" were conceived by the late Richard D. Barclay while attending Pennsylvania State College. He had been a childhood beekeeper and brought his own frame observation hive to college where it attracted much attention there on his window sill. He was always anxious to demonstrate the virtues of bees to other students. He later said that when a stranger entered the room, the bees filled their sacs with honey as if they knew they were about to have their hive opened and the brood drawn out for the benefit of the stranger.

Mr. Barclay began to hear of the correlation of fruit yield and the presence of honeybees. He was fascinated and read all that could be obtained upon this matter. Data on pollination were limited and Barclay began to tour the neighboring states to learn about experiments that had been made. Soon he had collected as much data as anyone and was accepted as an authority. Through the summer months he lectured at various horticultural meetings and during this time he realized the advisability of starting a company to rent bees to the fruit growers.

Upon graduating in 1910, Mr. Barclay tried selling fertilizer, but so many of his farmer contacts asked if he had forgotten the bees, he blossomed out with a small apiary of thirty colonies of bees the following year. From then on increase was made and during the first World War pollination became the accepted thing in this section of New Jersey.

When I started to work for the Barclay Apiaries in 1932, there was a nation wide depression, yet the pollination business was enjoying prosperity. There was very little competition and growing conditions made it possible to rent one colony of bees four times in a season, and even though several pounds of sugar were necessary to get the colony in shape for winter, it was a profitable business.

In the Burlington County area there were vast pear orchards, both Kieffer and Bartlett. Riding along certain roads would disclose immense stretches of these golden-white blossoms, considered by many the most beautiful of all fruit tree blossoms. Bees were rented to the pear growers at the rate of about one colony to two acres. As the first blossoms fell, colonies were moved in post haste to avoid all danger of spray poison-

ing. There was still time to rent these colonies to those orchardists having late-blooming varieties of apples. Many colonies were moved to the northern part of the county where the land was heavier and the apples bloomed later. As the bees were being hauled away from the apple orchards, blueberries in the "pine areas" were just opening their tiny bell-like blossoms and colonies were rented to the blueberry growers who were just coming into commercial production in this State (1932). They were avid bee "renters" from the very first.

The blooming period for the blueberries is anywhere from four to six weeks and after colonies had spent that time pollinating blueberries, it was approaching July—the month of cranberry blossoms. Colonies were picked up and moved to the cranberry bogs. So it was possible to rent a Barclay colony four times for the pollination of four different products—pears, apples, blueberries, and cranberries.

But, alas, the old days are gone! No longer are there commercial pear orchards in the State. Fire blight and impoverished markets have eliminated the pear industry from New Jersey. The intensive cultivation of the blueberry, modern soil practices, and the propogation of earlier varieties cause the blueberries to bloom the same time that the apples bloom. No longer can bees serve the apple orchards and then be moved to the blueberry plantations.

Cranberry bogs are now drained earlier causing early bogs to bloom in June when there is still a smattering of blueberry bloom left. This makes it necessary to move a new set of bees to the early blooming cranberry bogs because the blueberry grower will not part with his "pollinators" until the last blossom falls.

Let us see what happens at the Barclay Apiaries now. Eight hundred colonies are owned, four hundred of which spend the winter in the northern part of the State (Hunterdon County). The others are wintered in Burlington County. Nowadays, with the scarcity of labor, the North Jersey bees begin their ninety-mile trip southward early in March, as soon as the weather breaks and bee yards are clear of snow. Pick-up trucks haul them away in loads of thirty-five. If the weather is cold, they are hauled as single story colonies with metal covers on. If the weather is beginning to show signs of spring warmth and the nights are running temperatures over fifty-five degrees F., 1½-inch moving screens are inverted over the colonies and secured with four staples. The escape board is then stapled over this deep side down. This darkens the interior of the hive, yet allows air to circulate over the bees, cooling them more satisfactorily than any other method.

Moving bees with just the ventilating screens has been found unsatisfactory in this State due to the bees seeing light and in their attraction to the light, the bees fill the holes of the screen suffocating the bees below. Yet the inverted escape board allows air to penetrate the escape hole and circulate over the entire screen thus providing a maximum of ventilation.

When entering these North Jersey yards, every frame of brood is inspected for disease and colonies are equalized so each one moved contains a minimum of five frames of brood. In some years colonies cannot come up to this standard and must be moved with less. Extra brood is taken from the strong colonies and given to weaker sisters. Since colonies are wintered in two stories and moved away in one, the extra supers are stacked in the most protected corner of the yard until bees come back to occupy the yard.

These North Jersey colonies are moved ninety miles southward to the blueberry area and tho it will be several weeks until the bees are needed, the work is done and that is a good feeling in these times when hired help is so scarce.

If there are any colonies left in North Jersey after the blueberry orders are supplied, these are moved to convenient South Jersey yards to be used for apple pollination.

All the South Jersey colonies are now gotten ready. Colonies are examined for disease and equalized at six frames of brood, a frame of honey, and two empty combs. Screens and escape boards are secured and the colonies are moved into apple orchards. As soon as the blossoms begin to fall, the exodus begins, to eliminate all chance of arsenical poisoning. We have been fortunate

in having cooperative customers who always notify us before using their arsenic. This has saved our bees and allowed us to continue in the pollination business where so many have failed.

These apple pollinators are moved to North Jersey and supered with those supers that were left and we leave these colonies for two weeks, when all attention is devoted to those colonies on the blueberry plantations. These colonies are building up rapidly and supers have been added to curtail swarming, which is probably worse at this time than anywhere else in the State.

Excess brood is moved to North Jersey to strengthen weak colonies and supers are added lavishly to the blueberry colonies. Brood is also spread in the supers and we find that this does help. However, our two weeks have gone by and we must leave again as our Northern bees are calling us.

The North county bees are inspected for disease, requeened, and supers are piled on in anticipation of the sumac-sweet clover flow which begins July first with us. In other sections, it is somewhat earlier due to lower elevations and different soil conditions.

For many years we have been piling the supers five high several weeks before the flow began and though this practice is frowned upon by the old-fashioned beekeeper, it has served us well. Another unorthodox trick has been to eliminate our excluders from these bees. We allow the honey flow to confine the queen and by the middle of August, when we get back to examine the colonies, we find the queen in the lower two bodies. Results of this system have been larger yields and a distinct curtailment of swarming.

But after this work is done, we must hurry back to South Jersey where colonies are gotten ready to be moved to the cranberry bogs. If we are able to move bees from the blueberries, we examine the colonies for disease, taking away excess brood, extra honey, and once again leave the colony in one story. All queens over one-year old are replaced. At this equalization, seven frames of brood are left with the other two frames containing honey and pollen. These colonies are then moved to the cranberry bogs in Atlantic, Burlington, Camden, and Ocean Counties, and a few days after arriving, they are given a second super of empty combs. Here another unorthodox Barclay "method" is resorted to. Supers are given below the brood—"bottom supering".

We find that colonies will expand their brood nest upon the cranberry bogs but seldom create a surplus of

Hives of bees are loaded on big trucks for moving from one location to another.

honey, and the natural sphere of brood is rounded out in the bottom body as the pollen and honey force the queen downstairs.

Sometimes the fickle clethra alnifolia will yield honey and a third super is added to the top, but since this happens only about one year out of seven, we never count on it. However, we do count on the colony headed by a young queen to build up adequately and when cranberries are done blooming, the colony will be at a strength to harvest enough fall honey for its needs when it is moved over to the Delaware River area of either Burlington or Camden County where there is usually a flow from aster, goldenrod, and Spanish needle.

It is now that the State Bee Inspector visits us and inspects the South Jersey bees. After this inspection, he joins our crew in its mountain cabin where he inspects our North Jersey holdings. Why all this attention from the bee inspector? This is one of the advantages of having bees in New Jersey—it is possible to have one's apiary certified and if the apiary is free from disease one is entitled to use the label of the State Department of Agriculture stating that the apiary and honey are free from disease. So far we have been fortunate enough to be allowed to use this certificate since the law became effective in May, 1933.

After our inspection, the honey in North Jersey is escaped and hauled to the central extracting house. Finishing our extracting, the winter "entrance stops" are put on colonies to eliminate all mouse damage to the combs. Colonies are examined for ample stores and anything having less than sixty pounds of honey is given sugar syrup or combs of honey. In the past six years we have been fortunate in having sufficient honey to feed bees and found it unnecessary to use sugar.

Our winter months are spent selling our honey crop. Last year ten tons were produced from our 400 North Jersey colonies and it will all be sold retail in grocery stores and road stands.

Maple Shade, New Jersey

SHIPMENTS OF PACKAGE BEES—1943

Total shipments of package bees in 1943 from Georgia, Alabama, Mississippi, Louisiana, Texas, and California were about 14 percent larger than the 1942 shipments, according to the Bureau of Agricultural Economics. About 100 of the larger shippers in this area shipped 660,000 pounds of package bees in 1943 and expect to ship 662,000 pounds in 1944. Some difference between intended shipments and actual performance may be expected and will depend mainly on availability of labor and supplies. Most package bee shippers are booked for the season, and it is apparent that prospective buyers who have not ordered their bees early will have difficulty in obtaining them.

Reports of shippers indicate that of the total pounds of bees shipped 40 percent moved in 2-pound packages, 55 percent in 3-pound, 3 percent in 4-pound and 2 percent in 5-pound packages. There were a few bees shipped in units other than those mentioned but they constituted only one tenth of 1 percent of total pounds shipped.

The principal months of shipment of package bees were, April, 44 percent, May, 44 percent, June, 10 percent, and 2 percent during July or later.

The 6 states mentioned furnish the bulk of package bees for northern shipment. The firms reporting are estimated to represent close to half of the shippers of package bees in their states, and their shipments would amount to considerably more than half of the total bees shipped. The purpose of this report is eventually to cover all shippers of package bees in these states and present the information for the use of both shipper and buyer.

The labor situation seems to be the principal limiting factor for most shippers of package bees. The fact that the package bee business is highly seasonal makes it difficult to replace skilled help or hold experienced men the year round. Comments indicate that bees are in good condition.—United States Department of Agriculture, Bureau of Agricultural Economics. Washington, D. C., February 28, 1944.

Sixty Years with Bees and Fruit

By J. E. Johnson

[The writer of this article, now seventy-seven years old, began keeping bees when he was about ten years of age. Married 55 years, he and his wife have raised a family of five healthy children and they have had honey on the table at practically every meal. Mr. Johnson says he used to ask A. I. Root so many questions that in reading the answers he received it was hard to avoid contracting about 103 degrees of bee fever. Just lately he has been rereading Gleanings of 40 years ago.

This article clearly explains why a commercial fruit grower, even though he knows the value of bees, sometimes finds it difficult to avoid spraying fruit trees during the blossoming period.—Ed.]

Over forty years ago I used to write regularly for the bee journals. I then had about 70 colonies of bees and over 2000 fruit trees, over half of which were pears. Having an opportunity to sell out at a good price we decided to move.

With a family of five children we left our Illinois home and bought 170 acres of fine land in the Pecos Valley of New Mexico, near Dayton. I drilled an artesian well and I had available for irrigation purposes a flow of 1100 gallons of water per minute. I ran all the ditches, put in 40 acres of alfalfa and an orchard and started an apiary. There were fine people there and everything looked good.

The second year my well no longer flowed so I had to install a centrifugal pump and a 16 H. P. engine. However, the third year the water got so low that the pump would not raise it. While I loved both the bees and the fruit growing we were forced to move again.

The Apple Belt of the Ozarks

We then located in the great apple belt of the Ozarks of Southwestern Missouri, locating at Marionville, the center of about 5000 acres of apple orchards. Southwest Missouri had about 50,000 acres of apple orchards besides several thousand acres of peaches and some thousand acres of strawberries and grapes. A few years ago they shipped up to 200 carloads of strawberries daily, in the height of the berry season, as well as a good many grapes. The berry and grape sales are less now but the apple business is still good.

I began work in the orchard as manager of a 30 acre plot and my wages increased from $2.50 to $6.00 a day. I also worked on the power sprayer. During this time I lived in town and started an apiary.

When we first came to Marionville they had just begun to spray and they had several good crops of fine apples. This was during the first world war. One man who had a fine 20 acre orchard sold his apples on the trees, the buyer to do the picking, for $32,000.00. Another having 160 acres got $90,000.00 for one crop of apples. Another sold an 80 acre crop for $56,000.00. Of course, this was in war times, and the demand was very great for apples of that good quality. All the apple growers grew excited and additional orchards were bought up. All the growers had power sprayers but with more orchards to attend to they were unable to do the spraying until the calyx closed so they began to spray in bloom.

One man bought a 20-acre orchard for $2000.00. He pruned and sprayed it well and in three years sold over $20,000.00 worth of apples from an orchard that cost him only $2000.00 to start with. He bought two more orchards and then could not get over all three orchards with the calyx spray and he began to spray while the trees were yet in bloom. Others with large orchards were afraid the rains might hinder so they got in a hurry and began spraying also while the trees were still in bloom. In a few years they killed most of the bees in the vicinity although when they began there had been over 300 colonies of bees in reach of those orchards.

Inadequate Pollination Caused One-sided Apples

As a result many of the apples were lopsided and knotty and when cut open contained only one or two seeds, showing a lack of pollination. One of the men I have mentioned had poor crops for several years and finally lost all three of his orchards.

Fruit men are like other men. Some are wise, some otherwise. Some were stubborn and would not admit that lack of bees caused the trouble. At one of the fruit growers' meetings, I insisted that the failures were caused by spraying in blossom and killing the bees. One owner of a large orchard said he believed

there were enough flies, bugs, and other insects to insure pollination even if the bees were all killed. I explained that the flies and other insects just sipped the sweet nectars while the bees clawed all over the pollen and thereby thoroughly mixed it. Some said that since I had bees I was prejudiced but finally the county agent told the growers that I was right and that they would have to get more bees. This they did but continued to spray while the trees were in blossom so they soon killed the new bees also. A beekeeper outside the apple belt was persuaded to move nearly 100 colonies of bees among the orchards but they were so weakened that he lost nearly half of them by the time the following winter was over.

Difference in Blossoming Time

Most of the fruit growers now acknowledge that bees are necessary but the trouble has not yet been entirely overcome. The main difficulty now is that many of the old orchards have quite a few Ingram apple trees mixed here and there in the orchards. The Ingrams bloom about eight or ten days later than most of the other varieties. So when they apply the calyx spray they find most of these Ingram trees in full blossom. Instead of shutting off the spray they spray the Ingram trees right in full bloom.

The Winesaps blossom three or four days later than the Grimes and Jonathan. The Red Delicious are also two or three days later in blooming. Since they spray all at the same time they kill lots of bees.

Thirty years ago they sprayed only four times during the summer, for they had only the codling moth to contend with, and they had fine, clean apples. Now the fruit men have to spray as many as ten times and still they have quite a percentage of faulty apples.

Thirty years ago they used boiled lime and sulphur, one to forty, with three pounds of arsenate of lead for each spray to 40 gallons of water. Now they use the lime and sulphur, one to seven, for the dormant spray; and one to forty with the arsenate of lead for cluster bud and the calyx spray. They use the arsenate of lead and the Bordeaux mixture for the other later sprays.

Danger of Spray on Cover Crops

There is another difficulty. In some of the orchards white clover is sown under the trees; others sow cowpeas or soybeans. These crops get a dose of lead poisoning all summer so the beekeepers and fruit growers cannot work together very well.

Planting for Honey

I now live in Verona, Missouri, where there is only one large apple orchard near me. The owner is a beekeeper as well as a fruit grower and he never sprays the trees in blossom. I am starting an apiary again, this time with package bees.

In my boyhood days I used to read how A. I. Root got up early in the morning and went out to his garden to watch the big drops of nectar, so large that one bee could not take it all and sometimes two or three bees would be loading up on the same big drop of nectar. Mr. Root would imagine those bees talking to each other, wondering what to do with all that fine honey. How he enjoyed his bees and garden!

I wonder about the commercial producers of honey who handle thousands of colonies and produce carloads of honey. They have to take the hard knocks and they lose all the fun.

Why not have a real honey plant garden and have a lot of the best honey-yielding plants? Spend at least an hour each day watching the bees. It is not wasted time, for by so doing, one will live ten years longer. I have such a garden started and I enjoy it very much.

Every beekeeper owning a home should plant a hundred or more basswood trees, both the American and the European linden. Some European linden trees near here began blossoming when only four or five years old. There are great, large clusters of blossoms—not like the American basswood. If both varieties are planted, the blossoming period is extended, for they do not blossom at the same time.

Here is a list of honey trees that I recommend: American and European linden, tulip, the black and honey locust, and the catalpa.

For the garden I recommend the Simpson honey plant, the spider plant, catnip, horehound, anise, hyssop, mignonette, white and yellow sweet clover, and phacelia, also motherwort.

(Continued on page 174)

Pepping Up Meals

By Mrs. Benj. Nielsen

Delicious honey bran muffins so simple a child can make them.—Photo courtesy Kellogg Co.

It is when we are busiest, rushed, or hard pressed for time that we are most apt to slip into a cooking rut; appetites lag, individuals may become listless, irritable, or exhibit a "blue" or "down-in-the-dumps" feeling. The well known advice, go out and buy yourself a new hat and it will give you a lift—a whole new outlook upon life, might work all right for the cook's morale (personally, I dread shopping for a hat—most of them are so silly and hard to keep on!) but that might not do much for the morale of the rest of the family. Probably they would jeer at Mom's selection—or remain politely, discreetly silent at best. That sort of cure might prove a bit expensive, too, if you happen to be a moody sort of person. Haven't you noticed in stories—real life, too, that the discouraged down-and-outers, are always treated with a good meal and feel better—ready to face the world and its problems? Probably foods would prove to be a much happier solution. Give the old standbys a new dress, a new distinctive flavor twist—honey is absolutely tops for this purpose. Recipes need not be expensive, complicated and difficult to prepare, you know. New combinations, different flavor emphasis can produce wonders with the simple, inexpensive, everyday foods most of us have to work with.

It is true that shortages of certain foods and curtailment of other foods we like and are accustomed to using may seem more or less of a hardship. Considering the sacrifices made by the men and women of our armed forces, the adjustment of diets should be made gladly. It is important to keep the family well-nourished and in good health in normal times and even more important in wartime. So let's determine to make this contribution, this readjustment of diets cheerfully and wholeheartedly.

Cereals are plentiful and the use of a variety of whole grain and enriched cereals and flours is essential and economical. In combination with honey they provide exciting, appetite provoking, nutritionally good dishes with a quick energy pickup (100 calories per tablespoon of honey) which is desirable and highly essential in these days when most everyone has taken on added work and new responsibilities.

In looking over this month's recipes, I can just see some honey enthusiast single out one or two and hear the exclamation, "Humph, a teaspoon of honey is not enough to notice, not enough to bother with!" Don't be too sure about that! Remember, folks, it is the STEADY use of even small amounts of honey in many things that count in the long run. Educate or induce cooks to use small amounts satisfactorily for flavor emphasis, large amounts with equal satisfaction for flavor and sweetening agents, and you need have no misgivings about people continuing to use honey when sugar and syrups are plentiful again.

Recently when hard pressed for a quickly prepared vegetable when unexpected company dropped in, I opened a can of beans and buttered them in the usual way. "What DID you do with these beans," the lady inquired, as she helped herself to "seconds". "Just fixed them with a bit of honey—and let them simmer to reduce the liquid." "Yes, I saw you add the honey, but I would not have guessed such a little bit could

make such a difference in beans!" she marveled as she enthusiastically accepted the last drop of tasty liquid. Might be a good way to interest the menfolks in those point free green beans. You know, so many men object to green beans as too bland, tasteless and flat. Pep 'em up with a bit of honey.

Before the recipes, here are a few suggestions: If you are a green bean and bacon fan, try adding a bit of honey and let simmer for grand flavor. Good in baked navy or lima beans, too. Honey and tomatoes, stewed, cold canned ones, or casserole combinations. Save all sirup on honey canned fruits, add it to other fruit juices and use as part or all of the liquid in making deserts, sauces, gelatines, salad, and salad dressings. Like to cook with applesauce? Try using grated raw apple instead. Perk up your old standby cooky dough with a honey fruit filling. Use as a filling between two rounds or dot centers of cut dough and pinch edges up into attractive shape around the fruity center.

May these and the following pep up your meals and morale:

Honey Bran Muffins

Three tablespoons shortening, ½ cup honey, 1 egg, ⅓ cup buttermilk, 1 cup shredded bran, 1 cup sifted flour, 1 teaspoon baking powder, ½ teaspoon salt, and ¼ teaspoon soda.

Blend shortening and honey. Add egg and beat until creamy. Add milk and bran; let soak until most of moisture is taken up. Sift dry ingredients together; add to first mixture, stirring only until flour disappears. Fill greased muffin pans two-thirds full and bake in moderately hot oven, 400 degrees F., about 25 minutes.

Honey Apple Muffins

One-half cup shortening, ½ cup honey, 2 eggs, 1 cup grated raw apple, ¼ cup milk, 2 cups sifted flour, 3 teaspoons baking powder, and ½ teaspoon salt.

Melt shortening. Combine beaten eggs, honey, and fat. Sift dry ingredients together. Add first mixture and grated apple to dry ingredients all at once and stir long enough to barely mix. Fill greased muffin tins two-thirds full. Bake in moderately hot oven, 400 degrees F., for about 25 minutes.

Honey Bran Fudge Squares

Seven ounces semi-sweet chocolate (1 package chocolate chips) 2 tablespoons butter, 2 eggs, ½ cup honey, 1 cup flour, ¼ teaspoon salt, ½ cup shredded bran, ½ cup chopped nutmeats, and ½ teaspoon vanilla.

Melt chocolate and butter over hot water. Beat eggs well, add honey and continue beating until light and fluffy. Add chocolate mixture. Stir in flour, salt, bran, nutmeats, and flavoring. Pour into greased baking pan, making layer about one-third inch thick. Bake in moderate oven, 375 degrees F., 25 to 30 minutes. Yield: Sixteen 2-inch squares (8x8-inch pan).

Grecian Beans

One-half cup chopped onion, 3 tablespoons fat, 2 cups green beans, drained, salt and pepper to taste, 1 teaspoon honey, ½ cup bean liquid, and ¼ cup tomato juice.

Lightly brown onion in hot fat. Add the green beans, seasonings, honey, bean liquid and tomato juice. Simmer for 20 to 30 minutes. Serve piping hot.

Honey Peanut Butter Slaw

Two tablespoons peanut butter, 3 tablespoons salad dressing, 1 tablespoon lemon juice or vinegar, dash of salt, 1 teaspoon honey, 3 cups shredded cabbage, and 1 red apple, diced, unpeeled.

Mix peanut butter and salad dressing, add lemon juice, salt and honey. Add dressing to cabbage and apple and mix well.

Honey Salad Dressing

Two tablespoons honey, 1 teaspoon salt, 2 tablespoons flour, 1 teaspoon

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A cereal snak with honey bran fudge squares.—Photo courtesy Kellogg Co.

Is The Labor Shortage Giving You Trouble?

What Can You Do About It?

By Grant D. Morse, Ph. D.

[Note: While this article was submitted a year ago, and got crowded out for lack of space, it is still timely.—Ed.]

The man who owns a large number of colonies of bees today is confronted with difficult problems chiefly because of the current labor shortage. What can he do about it?

First, he should make his plans for the next few years on the assumption that this shortage will probably grow worse. Secondly, he should seek what ever help he is entitled to from his local selective service board. Thirdly, he should plan on using whatever help is available. Lastly, he should so arrange his work that duties which in the past have been performed when they naturally occurred will in the future be done in advance of immediate necessity.

I do not pose as an authority about the likely duration of the war we are in. To do so is dangerous because it may encourage a beekeeper to count on receipts from sales of honey at war prices over a longer period than we shall actually experience. At the same time, the beekeeper who hopes to be able to retain indefinitely the services of young men eligible for service in the combat forces of the nation may be doomed to disappointment. If the war should last for four more years, let us say, good men will be increasingly more difficult to engage.

There are three classes of men that may be reasonably well relied upon in these times: older men; young high school boys; and men physically or mentally subnormal. Of the three classes, the older men are the most reliable, especially if they are experienced; but boys of fourteen to eighteen years are capable of providing much help, particularly if properly directed and supervised. Many men with physical defects serious enough to render them ineligible for military service are yet often capable of near normal labor, especially if they are imbued with a desire to do their part to serve their country during a labor shortage. I do not mean to be facetious, either, when I say that there is an occasional instance where a man, regarded as ineligible for military service because of a mental deficiency, may be of real help as a laborer. This is the truer if the employer limits to certain types or kinds the work he is asked or permitted to do. My observation and experience lead me still to believe that if an employer cannot closely supervise the work of his helpers, the help needs to be chosen with more than ordinary care, because a careless or unintelligent worker will likely cause more actual damage in the course of a day than his positive efforts can repay.

In the matter of asking for deferments of men by local selective service boards, the beekeeper should realize that the information he has about his work and its value is not commonly possessed by the personnel of a draft board. For the sake of everyone concerned, he should supply the board with all pertinent information; and, because he is, as it were, merely a prophet in his own community, he may need to supplement his own data with statements from other authorities available to him, for example, the president of his beekeepers' association. The decision is then up to the draft board. But before making a decision, they are entitled to have the facts.

Planning the Work

Work that is not planned in advance is not nearly so fruitful as a planned program. Most of a beekeepers' work is commonly done during the one third of a whole year that lies in and about the honey flow period; at least much of the work done during this period is of a nature that does not permit of its being done later. It must be done immediately else profits evaporate. The wise beekeeper, therefore, plans to do in advance every last job that may be done in advance. Also, he adopts practices and methods that save time.

What are some of the jobs that may be done in advance? You know them as well as I; but in order that we may think about them together, I enumerate some of them here. To

begin with, every single article that is to be used during the late spring and summer period may be made ready in advance. The winter and early spring months usually make this possible. A warm work room, even if it is small, is almost a necessity. Few, particularly among hired help, will do good work in preparing bee equipment in cold quarters.

Are the veils repaired? Are the hive tools sharp? Have the queen excluders been scraped? Queen excluders are expensive. A few minutes spent in repair work will often salvage an excluder that would cost somewhere between fifty cents and a dollar to replace—if it could be replaced at all. In scraping excluders it pays to be careful not to cut the edges. The cutting edge of the tool should be held in a perfectly horizontal position, else in as few as three or four years the bees will gnaw the damaged portions and provide exits for themselves not planned by the beekeeper. Some one may ask: Why scrape them at all? Well, try using them without and see what happens. Have the frames been scraped and sorted? Some may not think it pays to scrape or clean frames that are to be used for extraction purposes. But I think it pays.

The sorting of frames is difficult, at extracting time, but it needs to be done then, or at some other time in advance of placement on the colonies. How carefully frames are to be sorted depends, of course, somewhat on the methods of beekeeping employed by the operator. Some insist that every comb be a brood comb, that is, a comb good enough to be placed in the brood nest. And that is a good policy if the operator can afford it. Some may insist the operator cannot afford to follow any other plan. If so, he must, of course, sort all frames annually. If the operator does not follow the plan of making every comb a brood comb, then he is driven to the choice of sorting his combs or restricting himself in his manipulations, avoiding all Demareeing, starting of nuclei, feeding of surplus combs, reversing, or any of the many alternatives open to him.

Yes, I think it pays to sort combs. Then if the operator wishes to use the inferior combs he may do so safely. But better still, he may then use his good combs wisely. When combs are sorted, the hive bodies containing them should be plainly marked.

Much has been written about marking equipment and about how it should be done. As for myself, I can see no good reason for not marking hive bodies. What are they for? Of course, if a man has only a few, and he wants a perfect picture for his visitors, that is one matter. Such a one may use a card or some such device under the cover. In my own case I want to know when I look at a hive what its condition was at the last examination without having to take the cover off. For example, if its queen was clipped, I want to know it, and I want the date. If it was short of honey, I want to know that. The quickest method of labeling is usually the best in handling bee equipment. Often the placing of a green branch under the stone or brick that holds down the hive cover will sufficiently identify the few hives in a yard that will need special attention within another ten days—provided of course, the attention they need is identical. A good example of the use of such a label is in instances where a portion of a yard needs more supers; or a number need new queens. But if the attention called for is different, then specific information may well be provided on the hive body in addition to the green branch under the cover weight. It's especially helpful to have equipment plainly labeled where more than one worker is using it. For example, it pays to have a few hive bodies containing honey for feeding purposes marked so they can be identified.

And how about time-saving practices? I haven't space here to enumerate them. But they are legion in number. Do you know them all? Of course, you don't. Neither does anyone else, but if you'll read the professional literature — **both the** magazines and the books—and then talk occasionally with another beekeeper who knows some of the things you don't and who is willing to trade his tricks for yours, you'll be better able to weather this labor shortage period, and do it without grumbling. We mustn't forget that either, must we? This war is a war of nerves, of feelings, of courage, as well as of tanks and guns, and so on. So here's to planning, and time-saving practices, and to a good season in spite of our difficulties.

Saugerties, N. Y.

Beeswax Shortage

By H. H. Root

Recent disclosures from W. P. B. indicate that in spite of the larger production in United States in 1943, and greater imports than in 1942, the Army and Navy are still having difficulty in obtaining enough beeswax. In 1944 producers are called on to make a still more determined effort to save. Just as housewives are saving unbelievable quantities of fats that would otherwise be thrown away, beekeepers, if serious attention be paid to the urgent need, can, by saving ounces here and there, accumulate pounds that with concerted effort will rapidly multiply into tons.

By saving fats the housewife receives additional points. Beekeepers do not receive more points but they do have an incentive—the high selling price of the product. Many a man who would not think of throwing away a postage stamp will feel that his time is too valuable to save an ounce of beeswax. Yet if all the ounces of beeswax that will go to waste this year were saved, the Army and Navy would experience no wax shortage and the war with its terrible waste would more easily be fought.

Well-known but Often Forgotten Hints

(1) Be sure to protect stored combs from wax moths. Tons of valuable wax are destroyed each year by these pests. In the South, especially, it is frequently necessary to fumigate. Such fumigation need not be dangerous nor expensive.

(2) Broken, crooked extracting combs are costly to have around. Handling them consumes time. Trying to keep them in use costs time and honey. Melt them up. If you do not have adequate equipment for rendering, get what wax you can by melting them. Ship the refuse to some concern having equipment for getting the rest of the wax. Weighted-down bags of old comb in boiling water will yield a lot of wax. When dry the refuse may be shipped to a rendering plant at comparatively small transportation charge.

(3) Keep a good hive tool or scraper with you. The time spent in freeing combs of burr comb saves labor throughout the season, so the wax saved costs almost nothing. Keep a pail to hold small pieces of burr comb that accumulate in the apiary. Decide now to have an inexpensive sun extractor in use during the hot weather. It handles scrap wax efficiently for while it does not feed itself it works for nothing! These extractors as emphasized by E. S. Prevost of South Carolina, are far more efficient if the glass is doubled.

(4) Space extracting combs eight to a 10-comb super. Get all the honey you can by draining, pressing, or centrifugal drying, then plan to render the dried cappings efficiently without burning the small amount of honey left. Remember that beeswax from cappings is the nearest free from propolis of any beeswax. **Don't** add propolis scrapings to good beeswax. The fact that beeswax is in such critical demand does not justify practices that sadly interfere with our product's well known waterproofing and polishing characteristics.

Astonishing the amount of comb an outdoor colony will build in a short time.—Arthur Schwoeppe, Cincinnati, Ohio.

MORE BEE TREES

By W. P. Kinard

Three of these bee trees were set up in my apiary, in cut-sections, during March and April, 1943.

Fig. 1, 2 and 3 were all found within a few yards of one another, and the bees were entering the three "Post-oak-trees" on the "East" side. 1 and 2 were right near the ground. The little dog posed near the busy bees that bright morning. Preston, Jr. also poses very much afraid (in No. 1) beside the first bee tree of his finding. In No. 3, the bees used three entrances, about 12 feet above ground.

Fig. 4 is a large red oak cut March 15th, it being right out in the middle of a neighbor's newly cleared field. He came for me to remove the bees. Their fat combs of honey, touched the ground in the cavity. Their brood was all above. They entered the tree five feet above ground. Having removed around fifty tree colonies, I noticed this was the first that had stored 100% of their honey "below the brood". This snapshot was made just before putting the tree trunk on the truck. They went in the fourth 10-frame super this past season, installed on top of cut, therefore readily accepting supers.

As in No. 4, No. 2 and 3, the bee-trees were cut, and installed with supers in the apiary. Due to scarcity of films I have no snap shots of these after they were placed in the apiary.

Louisville, Miss.

The Canadian Beekeeping Council

By Allan T. Brown

[Mr. Brown is a commercial honey producer, past president of the Ontario Beekeepers' Association, and now member of the Canadian Beekeeping Council.—Editor.]

Some time ago, the writer approached Editor Deyell with the suggestion that perhaps Gleanings' readers might be interested in a report of the annual meeting of the Canadian Beekeepers' Council which was scheduled for December 13th to 17th, 1943, in the Canadian Capital City, Ottawa. Ye Editor thought the idea good and said so, hence this article. As an afterthought, however, we decided to outline the functions of this organization and what it has been able to accomplish in the four years of its existence.

In order to impart a clearer picture of the functioning of this organization, a short resume of its formation and early history may prove helpful. Whether it was the result of a premonition of events to come, or, just blind luck, we are not prepared to say, but the formation of the Council practically coincided with Canada's entry into the war and when the inevitable stage of wartime restrictions and price fixing arrived, it was functioning smoothly and had become a useful instrument in the hands of Canadian beekeepers in protecting their interests and securing equal treatment with other industries at the hands of the War Price and Trade Board and the Rationing Administration.

The Council had its inception in a resolution introduced at the Convention of the Ontario Beekeepers' Association held in Toronto in November, 1939. The resolution asked "that steps be taken toward the formation of a national body to represent all Canadian beekeepers in matters of mutual interest." Out of that resolution emerged the Canadian Beekeepers' Council at Winnipeg, January, 1940.

It was not intended to be a national beekeepers' association but as the name implies, a council with power to formulate policies and speak with the united voice of the Canadian honey industry when occasion demanded.

The member organizations which compose the Council are the Provincial Beekeepers' Associations and the Provincial Honey Co-operatives. Each provincial beekeepers' association names one representative, each provincial honey Co-operative likewise. In the event of a province having no co-operative, the association names two representatives. At present the entire major honey producing areas of Canada, consisting of the Provinces of British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, and Quebec, are organized and represented on the Council. Therefore, the Council consists of twelve representatives, two from each of the aforementioned provinces.

The Council is financed on a budget apportioned among the various provinces, on the basis of volume of production, the average of four preceding years being used as the basis of computation. Thus each province contributes to the budget a proportion equal to the ratio which its average production of honey over a four year period bears to the total national production. Each province is free to raise its allotment in any way it desires, but the generally accepted method is through donations and subscriptions of honey and cash.

So much for the background. Within the limits of a short article, it is impossible to set forth in detail the number and variety of the services the Council has been able to render the Canadian honey industry, so a few highlights will have to suffice. Perhaps the most important matter dealt with by the Council in its early years was the price fixing order of the War Price and Trade Board, which froze all commodity prices at levels prevailing during a basic period, September 15 to October 11, 1941. At that time honey prices were just beginning to emerge from depression figures which had been as low as 39 cents per four pound pail, retail. The order virtually condemned honey to depression prices in the face of rising production costs. The Council fought the Board on this issue and won out. The result was the issuance of Price Board Order No. 182, raising ceiling prices of honey to a level that literally put thousands of extra dollars in the pockets of Canada's beekeep-

ers. Order 182 was later found to have some flaws and loopholes which led to its replacement a year later by Order 286 which in addition raised the wholesale price of 8-lb. containers from $6.75 per case to $7.00, and comb honey to 40 cents per section.

On September 1, 1943, honey was rationed. Included in the same category were corn syrup, sugar syrups, molasses, jam, marmalade, and all other sweet spreads, a dozen or fourteen items in all, purchasable with one coupon designated as Coupon "D". In addition sugar was listed as an alternative purchase with the same coupon although sugar had already been rationed for a year with its own coupon. The amount of honey allowed on one coupon was six fluid ounces or one-half pound net. For two weeks previous to the commencement of rationing all sales of honey were frozen. Immediately a storm of protest arose from beekeepers throughout the country. Eight coupons were necessary to purchase a four-pound pail of honey, while a similar container of honey's arch-competitor, corn syrup, could be purchased for four coupons. Most producers had taken orders for their entire crops and had made deliveries of 50 per cent to 65 per cent when the freezing order was issued. The purchasers of the remainder had necessarily to be disappointed. In addition, customers had in many cases provided their own containers and beekeepers found themselves with tons of honey packed in containers of all sizes and descriptions, mostly unsalable and much of it granulated. To liquefy all this and transfer it to small containers would entail considerable labor and waste. No one connected with the industry had been consulted and it appeared that the Ration Administration had exercised the traditional prerogative of Government Bureaus to act first, and do their thinking, if any, afterward. This was further emphasized after a few weeks when it became apparent that one of the effects of rationing was to destroy the producer-to-consumer business built up over a period of years by many beekeepers and force honey into wholesale and retail channels. Still later, retailers began to complain that honey was lying unsold on their shelves because the public was using up to 90 per cent of the D Coupons to purchase extra sugar. The whole situation was absurd and as was to be expected, when the Council assembled in Ottawa recently, the ration order was high up on the agenda.

After lengthy discussion, the Council, after voicing approval of the principle of rationing as a means of assuring fair and equitable distribution of available supplies, asked:—

1. That sugar be removed from the list of commodities purchasable with "D" coupons, or,
2. That a special coupon be issued for honey.
3. That the value and validity rates of "D" coupons be advanced to insure freer movement of honey, and to enable consumers to purchase their entire rationed supply of honey at one time.

The head of the Rationing Division of the War Price Board, Mr. C. K. Martin, would give no definite assurance that clauses one and two would be acceded to, but expressed willingness to raise the coupon value as high as necessary to move the honey crop quickly. There the matter rested but more will be heard of it before the 1944 crop is ready for market.

To the Foods Division of the War Price Board the Council presented a brief in which attention was drawn to the fact that under rationing the one pound container is the only readily salable package; that the tendency will be to pack the greater portion of the 1944 crop in the one-pound paper container; that due to pulpwood shortage large supplies of this size may be unavailable; that it is an uneconomical size from the standpoint of both producer and consumer, costing the latter up to 30 cents per pound.

It was suggested that if ceiling prices on the normal sizes 2's, 4's, and 8's were raised, and in the event of coupon values being raised, allowing ready sale of these sizes, the producer would secure practically the same net price as for one pound containers, considering lowered labor and container costs, while the per pound cost to the consumer would be lowered.

The Council is also asking for a floor price under honey to protect the beekeeper against possible disastrous postwar deflation, also that

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Moving Bees Without Screening

By Leslie Burr

The story told by Grant D. Morse in the November issue of his experience in moving bees, and of his fear in attempting the move without screening the hives, interested me; also the terse statement by Cary W. Hartman of the method followed by him in moving with open entrances. I have an inner urge to add a few words on the subject.

My first experience in moving bees occurred when I was five years old —in the year 1886, back in Illinois. The occasion was the entrance of the Burr family into the bee business. Two colonies of bees in box hives were purchased by my father about five miles away from home, and moved in a wagon, each hive securely wrapped in a bed blanket. The moving was done at night, and I rode in the back of the wagon along with the bees.

Later when the two colonies had grown to a hundred or so an outapiary was established each spring and the bees moved back in the fall. Entrance screens alone were used, and although it took the horses an hour and a half to reach the outapiary location there was never any loss in the moving.

Then some 40 years ago some one reported that they had moved bees with open entrances and that it was a success. Since reading that item, I have, whenever the occasion demanded that I move a colony of bees, done so without the use of screens.

The last time I moved a colony was in May, and I did not wait for darkness, but loaded the bees before sundown, as I had done many times before. That allowed the loading, the trip, and the unloading to be done during daylight. The beauty of this is that there is no bother of having to scratch out stings where the bees have crawled into unexpected places.

Also I will add that the bees were moved across the city of El Centro, through the heart of the business district, without any trouble or the citizens, including the police, knowing that the bees were in transit.

Points To Remember

Have a hot smoker at all times during the operation. Not that it is necessary to smoke the bees while the vehicle is in motion—which is not the case—but to have a hot smoker in the event that for some reason a stop has to be made. Speed in getting the hives into the vehicle, more speed in getting the vehicle underway, and speed in unloading the bees at the new location is essential. Then leave the bees strictly alone until attention is necessary. The bees are out foraging for nectar an hour earlier the next morning, just to see what the new location has to offer.

There are times, even for short moves, when the bees have to be confined, and the top screen is not a bad thing along with a closed entrance. But for most short moves where the open entrance is not advisable, the stuffing of the entrance with fresh grass is all that is necessary.

For some reason, while the bees resent a metal screen at the entrance, they do not seem to be seriously bothered by having the entrance stuffed with fresh grass, and the grass is much easier removed. Just pull one end loose and let the bees work their way out. For putting the grass in the entrance, the broad bladed scraping knife is the best tool.

Yes, moving bees for first timers, is a serious problem that calls for preparation, and some worry mixed with doubts as to how the move would progress. Well, moving bees can be serious. I knew a beekeeper who some years ago had a four-mule team stung to death when three colonies of bees broke open. But to move a few colonies can be little more trouble than moving a trunk. A smoker, a handful of fresh grass, and with a motor vehicle the move is a matter of minutes and no trouble of any kind.

HERE'S A GOOD ONE

By Bruce L. Morehouse

Yesterday a one-colony beekeeper told me that he had just fed five pounds of sugar to his colony by dumping it dry on top of the cluster! He complied with the letter of the law by feeding the sugar to the bees, and HOW!!

Montivedeo, Minn.

[This goes to show that we should be quite specific in writing directions, especially for beginners.—Editor.]

Do Queens Lay Eggs in Cages Enroute?

[The following letter from L. T. Floyd also our reply raises a question upon which more information is needed. Mr. Floyd supervises the handling of thousands of packages and queens at port of entry to Canada at Winnipeg.—Editor]

"Dear Mr. Deyell:

" You make a statement on page 13 of the January, 1944, Gleanings that raises a point of interest to me. It interests me because of its relation to the introduction of queens from cages. You state:

" 'A queen that is laying eggs is more likely to be accepted than is a young queen that has travelled in a mailing cage for a number of days and is dried up and runs around like a virgin.'

"Until we began to receive queens in cages without attendants it was the general accepted idea that queens when caged laid no more eggs until released on combs but we find these queens in empty cages go on laying eggs and sometimes have the hole at the end of the cages which is in shape like a cell in a honey comb, almost full of eggs.

"When the queen has attendants these attendants, it appears, have eggs for breakfast but these eggs in the cages where the queens travel alone are out of the reach of worker bees and the queen keeps on laying and does not dry up as is generally believed but is all ready to lay eggs as soon as she reaches the combs.

"Statements come to us of some who find queens depositing eggs in the combs an hour after the package has been hived where the queens are introduced at hiving time. This could not happen if it took a day or two of readjustment before she started to lay. While I agree with you that queens from cages are often refused I am not satisfied that the queen stops laying while on the trip."

L. T. Floyd, Provincial Apiarist,
Winnipeg, Canada

"Dear Mr. Floyd:

"What you say about queens in mailing cages dropping eggs is interesting. I have noticed this, at times, when queens are caged for some time, especially in a colony where bees have access to the screen and pass food through the screen to the queen inside. A number of years ago, we kept about thirty queens, each queen in a Miller cage, with no attendants, in a queenless colony for about a month. It was necessary to put on a slow feed at the entrance to make conditions comparable with a honey flow. Of course, the bees in the colony fed the queens in their cages and you should have seen the eggs in those queen cages.

"I suspect queens shipped with packages do lay eggs, or rather, drop eggs in the cages enroute, especially if queens are shipped in dry cages, making it possible for the bees to feed the queens enroute. This is one advantage of shipping queens in dry cages.

"When queens are shipped with attendant bees in cages within the bee shipping cage, I suspect there is less likelihood of the queens being fed lavishly and also less likelihood of queens dropping eggs.

"Have you ever seen queen eggs in a mailing cage, when a queen is sent through the mails with attendants? I can't say that I have. Furthermore, such queens are usually dried up and small, especially if the bee candy is hard. This question of whether or not queens drop eggs in mailing cages when attendant bees are present is worth investigating."

M. J. Deyell, Editor

[A reply to the question in the last paragraph has not yet been received.—Editor]

"That robot is the best helper I ever had."

From the Field of Experience

A STRANGE STORY OF TWO PACKAGES OF BEES

By A. Dorflinger

I bought two packages of bees the spring of 1943 from Texas to pollinate my orchard. When hiving the bees I forgot to remove the tin from the queen cage of the hive "A", and when I removed the queen cage after two weeks, the bees had already built a comb around the captive queen, which I then released.

To my greatest surprise this hive "A" built up rapidly into a very strong colony and has, so far, filled the brood chamber and four full sized supers over the queen excluder. (This was written August 28, 1943.—Ed.)

Hive "B" started some queen cells and made slow progress. The bees did not go into the super and on a very warm day swarmed.

I believe it would be worth while for some northern apiarist to repeat my involuntary experiment.

My locality is not favorable for beekeeping and the neighbors who kept bees had seldom more than one full super.

If it is possible to get four supers full of honey with a hive full of honey and pollen from a package of bees—why bother about wintering bees?

Palatine, Ill.

[Apparently something must have happened to the queen in hive B. Generally speaking it is advisable to have the queen in a package start laying as soon as possible after bees are installed. It takes three weeks for an egg to develop into a worker bee, then almost another three weeks until that bee is old enough to become a full-fledged field bee—a nectar-gatherer.—Editor.]

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BIBLE REFERENCES TO BEES AND HONEY

By Dr. J. E. McKee

Bees are mentioned four times in the Bible, all in the Old Testament; while honey is mentioned sixty-three times in the Bible—fifty-eight in the Old Testament, and five in the New Testament. Some of the Hebrew words used (dropping, juice, flowings, etc.) imply that the ancients were familiar with liquid honey as well as honey in the comb.

Two Bible references to honey are of especial interest: Proverbs 16:24 "Pleasant words are as an honeycomb." How much each of us needs to remember this each day of our lives. And in Luke 24:42 we read that the Master, after His resurrection, asked the Disciples if they had anything to eat, "And they gave Him a piece of a broiled fish, and of an honeycomb." As He ate the fish and the honey He gave His Disciples the "Great Commission" to take His Gospel to all the world.

How different the world would be today had we obeyed that commission.

Alpine, N. Y.

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KING BIRD A BEE CATCHER

By O. J. Jones

I will stay with my offer of 25c per head for all the bees that the cat bird or wood thrush catches. Any man who knows birds will stay with me on that offer.

Any of the large fly catchers will catch bees, but the King bird, known as the bee bird or bee catcher by bee men, is the worst one. The King bird is about the size of the cat bird, same color on the back with white breast. He is described in bird books as the bird that knows no fear. I have seen him scores of times chasing chicken hawks, crows, and owls out of the orchard when I was a boy on the farm in Ohio. It is reported that he will attack the American Eagle. He catches more bees than all the rest of the birds put together.

Wichita, Kans.

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ONE MAN'S OPINION
On Harnessing the Weather

April is one month that brings every conceivable condition for beekeepers in this country. From the deep South to the far North, beekeeping conditions range from midsummer to mid-winter, with all other degrees of climate in between. So, it is pretty risky to try to tell you what to do about your bees for April. The best bet is, that what should be done—**do it now.**

I get a kick out of planning ahead for a coming business year. I lay out beautiful plans, based on the Weather Bureau's normals, as to just what I am going to do, and when and why.

The reason that I am wrong so

often is because the rarest thing in the world is a normal year. There just "ain't no such animile." Normal weather is an average of many years, and while it tells us what we can expect, it is no guarantee that we are going to get it.

Normal rainfall is surprisingly constant for every month in the year for this neighborhood. Yet we have wet years and dry years. We have years like 1943, where the spring was a lot wetter and colder, and the summer a lot dryer and hotter. The average for the year was not far from normal, but how it was distributed --ouch!

The old saying that nobody does anything about the weather has been used so often that it is more odorous than ripe, if you get what I mean. The fact is that we can do something about the weather, if we put our minds to it.

Knowing that the weather in this area will bring cherry blossoms around the 25th of April, and apple blossoms around the 10th of May, we can lay our plans accordingly. This does not apply only to beekeeping. It is just as necessary for all rural activities. We can lay our plans for the normal well in advance, and then adjust our schedules ahead or behind by the few days or degrees of temperature that make up the big difference between "cold", "normal", or "hot."

So many times I have worked out a careful schedule and then have had some natural cause break it up, that perhaps I should think that it is a waste of time. But I don't. Schedules can be changed to fit circumstances, and the orderly progression of following a schedule generally means that we will not forget or overlook some of the important things that might mean the difference between a crop and no crop.

Orderly progression, and doing the right thing at the right time will bring a world of benefit. A schedule made up with wishful thinking, and an attempt to follow a rigid schedule are generally the reasons why a lot of people figure that they can't plan ahead. **Failure is generally caused by the lack of flexibility of mind and methods.** Recognizing the breaks in the schedule in time to take advantage of them is the way to do it.

Some place I heard that in order to be successful you have to be right 51 per cent of the time. That should give you a pretty fair amount of elbow room to make up and follow a successful plan for your own business of keeping bees, whether it is for a hobby, for pin money, or for a living.

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FIRE PREVENTION

By A. M. Southwick

During our 25 years of beekeeping we have never started a fire from smoker sparks. In each apiary we leave on a rock wall, or hive cover, an old paint can or a large flower pot partly filled with gravel and covered with a large inverted clay flower pot saucer. It takes only a second to dump the smoker fuel and cover it safely. The extinguished material is dry and usable at any later visit.

Waban, Mass.

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POLLEN SUBSTITUTES HERALDING A POSSIBLE NEW ERA

By E. R. Root

Thanks to the work of Dr. C. L. Farrar of the U. S. Bee Culture Laboratory at Madison, Wisconsin, and Dr. M. C. Haydak, of the University of Minnesota, a possible new era of bee production is foreshadowed. In the first case, Farrar has brought out the formula of three parts soybean flour expeller processed and one part natural pollen secured by a pollen trap in the fall when pollen is plentiful. In the second case, Haydak recommends the same flour but using skim milk powder instead of pollen.

Experimentally, at least, both formulas give promise of a greatly increased production of bees when and where natural pollen is scarce and wholly inadequate to keep broodrearing at its height in the spring when it is most needed.

It should be noted that not all localities are deficient in pollen, but many are, resulting in reduced force of bees to gather the crop.

For particulars on how to prepare and feed pollen substitutes, send for Technical Bulletin No. 160, University of Minnesota Agricultural Station, St. Paul, Minn. Regarding this, Dr. W. E. Dunham of Ohio State University writes:

There is a small group of central Ohio beekeepers who will begin this year for the first time to try out soybean flour. Of course, they do not have any natural pollen to mix with the soybean flour as is advocated by Dr. Farrar. Several of these growers are planning to use powdered

skim milk according to the recommendations of Haydak and Tanquary. Some difficulty has been encountered in locating powdered skim milk, but I was able to obtain a supply from the Pickerington Creamery Company, Pickerington, Ohio. They say that they have to divert 75 per cent of their production to the government, but the remaining 25 per cent can be used for civilian purposes. They are asking 16½ cents a pound for their highest quality powder.

The soybean flour can be obtained from Killion and Sons, Paris, Illinois, and the skim milk powder from Twin City Milk Producers' Association, 2402 University Ave., St. Paul, Minnesota.

We would infer that one may get a limited quantity of skim milk powder from a local ice cream maker or dairy man in one's locality. If not, use skim milk from which cream has been taken, mix it with the soybean flour and a little honey. Place this on top of the frames in the form of candy or let dry in trays outdoors in the sun. (See Editorial page 152.)

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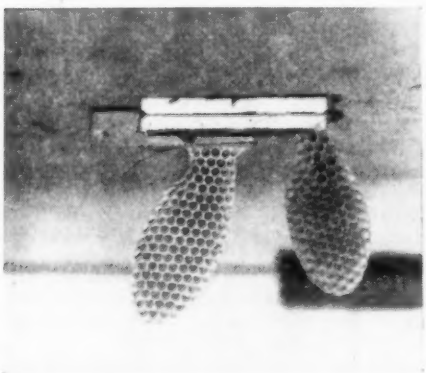
UNUSUAL COMB CONSTRUCTION

By E. L. Rhoads

While I was introducing some queens early last fall I wedged the queen cage between the frames rather than placing it on top and when I inspected a week later found the queens released and the comb on the bottom of the cages



The bees saw their opportunity to build more comb.

as shown in the illustration. At the time four queens were being introduced and this formation was on two cages. I have used this method of introduction a number of times but had not had comb built before.

[Apparently the space between the combs, made by spreading them to make room for the queen cage placed flatwise between top bars, encouraged the bees to build this comb. To avoid such comb building the queen cage may be placed on top of the frames, screen down, so that the bees may have access to the screen. To make room for the queen cage the inner cover should be placed bottom side up, or, with the rim down.—Editor.]

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SECOND GLANCES

By C. M. Isaacson

Proper pollination of orchards is largely dependent on honeybees. Accordingly, the information in Mr. Myer's article should be of wide interest. As he plainly points out, if improper spraying, and especially the use of poison dusts, increases, bees may disappear from orchard regions, with a consequent sharp decrease in fruit crops. Unless growers can be made to realize this, a situation similar to that after the first World War may arise, to the detriment of everyone. It is a serious matter, (page 81).

Package bees are profitable if handled correctly, always assuming, of course, that good packages and queens are received. Editor Deyell's discussion (page 83) is interesting and clear. It should be of value not only to beginners but to many of us who **think** we are beyond that stage. Proper installation, protection, and plenty of food are, as the article states, the essential points. While perhaps not always essential, gorging the bees with syrup before hiving does allow the packages to obtain a quicker start by permitting the queen to be liberated immediately. It is really the simplest and safest way to install packages.

Early booking of queen orders has doubtless not been emphasized sufficiently (page 86). Morley Pettit tells why it is even more desirable than doing likewise when ordering packages. Queen-rearing is a job calling for detail and exactness on a quite rigid schedule, and by ordering in advance the beekeeper can enable the shipper to give him both better service and better queens. Incidentally, the observation that properly prepared candy can make a big difference in the condition of queens upon arrival is certainly true. Shipped on too dry candy, queens may be injured and fail shortly, even if arriving seemingly O. K.

Wintering bees in cellars is not as common a practice as it once was, but a **properly constructed** cellar is still a honey and worry saver. Mr.

Baird outlines his methods of spring management rather well (page 87) and gives several points that are well to note. His method for dealing with rats, taking out a few colonies at a time from the cellar, checking immediately for honey (this is often wise with outdoor wintered bees also), clipping queens —all these are of value.

A well arranged apiary does make manipulation faster and more enjoyable, (page 90). Mr. Wurz' yard looks very well, altho I wonder if the varying directions of hive entrances do not make it difficult to get out of the way of worker flight when handling colonies. Perhaps I am mistaken. That low cart should be a handy type for any beekeeper to have.

Names are often confusing. I agree that "top entrance" should not be loosely used, and have always preferred the term, "upper entrance", instead. We are similarly careless in our use of many other beekeeping terms, for instance, "hives of bees", when we mean "colonies". (page 91).

Requeening with laying queens is always preferable and safer, which is why C. H. Pease has had such success with requeening by simply putting in the new queen between her own combs. But to lose never a queen during a space of several years is quite a record (page 91).

A poor excuse is **not** better than none. And "One Man's Opinion" is certainly correct, the flimsy excuse of, "it's wartime", is decidedly no acceptable reason for **poor** work. Less work, yes—but make that which you can do, good. This is for all beekeepers (page 92).

That additional sugar for bee feeding can be secured **if necessary** is good news, especially to those with package bees to start out. Twenty five pounds (the new limit) is much more adequate than the 15 pound amount formerly allowed. Of course sugar should not be used at all unless needed, but its proper use may mean many times its amount in honey secured later on.

Honey is a clean product, through its very nature (page 101). It has been well established that few disease germs harmful to humans can live any appreciable time in honey. Naturally this is no excuse for uncleanliness in its preparation, but it does give honey a distinct superiority over other food products in this respect.

The American Honey Institute has moved into new quarters (page 99), but there is nothing new in its constant work in keeping people honey conscious. That has been the same for years—and will continue as long as we beekeepers give our support.

Middle River, Minnesota

Bendy Schenker of Glencoe, Ills., eight years old, the youngest member of Cook-Du Page County Beekeepers' Association, a going organization.

From North, East, West and South

NO. CALIFORNIA, Mar. 3

Weather: After a long, dry summer, the rain came early in January, and for January and February we could boast of our so-called "rainy season". In the mountains the snowfall has reached a depth of 88 inches at Soda Springs. This is the heaviest fall in six years. It will lessen the danger of drought this summer everywhere in the northern part of the state.

In the valley there is still a shortage of rainfall, far short of normal. In the star thistle district there is 17.13 inches reported, against 26.79 inches usual at this time of year. Here in the eucalyptus district the rainfall is still below normal.

Condition of Bees: Bees appear to be wintering well, with plenty of brood and ample pollen from redwood and eucalyptus. In the eucalyptus district swarming will commence early in March. The rainy season has kept bees in their hives and they have built up rapidly.

Beeswax: Supplies are very light. Demand exceeds supply. The market is strong at ceiling prices.

Market: Very little honey remains in the hands of producers. Buyers keep busy and report they are able to keep retailers fairly supplied with honey.

Miscellaneous: Our State Association grows stronger. With such splendid leadership as we have this winter by Dr. J. E. Eckert of the University of California and H. M. Krebs of the State Department of Agriculture, it could not be otherwise. Through their work, county associations have become much stronger, and the affiliation of the county associations has strengthened the State Association. Winter meetings have been well attended.

The leading question before us today is, "Shall honey be rationed?" As nearly as we can see, our members oppose the rationing. Honey should not be rationed, because mere rationing would not cause a redistribution of honey sufficient to correct our difficulties or to cause a "wider and more equitable distribution" throughout the country.

Honey should not be rationed.—Cary W. Hartman, Oakland, Calif.

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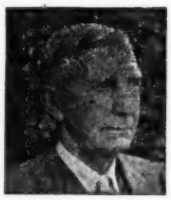
SO. CALIFORNIA, March 2



Weather: All in all, February weather has been mild and conducive to the growing of all kinds of vegetation. A little surprise came on the night of the 14th, when the mercury dropped to a low for the winter and smudge pots were freely used in the lemon groves. The weather man who reports the frost warnings had given notice that his services would be discontinued on a certain date, but when the cold snap came so suddenly he decided to continue another week. Might say February was warm and balmy up to the 13th, hard frost the 14th, and a light shower the 15th, since which time we have had some nice rain which has set things up in nice shape for the start of a honey crop in '44.

Market: Yes, we have a good market with little or nothing to sell.

Miscellaneous: Several meetings of beekeepers have been held in Southern California since our last letter. Much of the discussion at these meetings pertained to "roll back" in prices and the rationing of honey. Those present seemed almost unanimous against the idea of rationing. The roll back idea is more or less a haze in the minds of many beekeepers but with proper information on the subject there would be little objection. The opinion among beekeepers seems to be that the difference between 12 cents to the producer and 30 cents to the consumer is entirely too great. This war has thrown much of our smooth easy-going machinery of production and sales so out of balance that it calls for some adjusting and perhaps the "roll back" on retail prices is the way out. World War 1 saw honey prices skyrocket while labor prices did not advance nearly so rapidly. The present ceiling price to the pro-

ducer will probably handle the situation much better.

Representatives were at the meetings from cooperative marketing organizations. There is considerable interest in the subject and we understand that Orange County beekeepers have such an organization well under way. All success to you. That the idea is good there is no question of doubt. The trail of the exchange, cooperative, and various marketing organizations in California since we entered the business has been varied and winding. When we sold a crop of honey for 3½ cents per pound it was below cost of production, if a beekeeper charged anything for his time, and when we sold for 21 cents, well, there should be a happy medium somewhere in between where both the producer and consumer would be satisfied. We hope that these remarks are not taken too seriously but we must, to a certain extent, build our future edifice out of the experiences of the past.—L. L. Andrews, Corona, Calif.

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TEXAS, February 29

Weather: February lived up to tradition this time. The groundhog could see no shadow and the month has been wet, cloudy, and disagreeable as anyone could wish, highest temperature 83 degrees, lowest 30 degrees, rain occured on 13 days and 24 hours a day. Honey plants and bees have prospered. Plants in semi-arid regions bloom when there is rainfall without regard to heat and bees go to work when new pollen and nectar are available.

Condition of Bees: On coast locations wild peach **(Prunus carolimana (Mill) Ait)** is giving the first of what looks to be a real flow. In the Hill Country Agarita **(Berberis trifoliolata Moric)** has made its best contribution to bee feed for years. Generally it blooms from the last week in January to the tenth of February when it is dried out or frozen, but in 1944, from February first throughout the month, it furnished much pollen and evidently much nectar, — reports say hand-sized patches to shallow super. **Lesquerella recurvata (Englm) S. Wats,** a mustard that resembles a buttercup, covered acres and from the number of bee visitors and the length of the stay, pollen and nectar were in abundance.

Miscellaneous: There should be another group of war workers recognized. The country school children with their older brothers and sisters in the service. The nation asking for the greatest amount of food ever produced, the school children without applause or notice, take up the work left by big brother and sister or even Dad, and are just a little ahead in the team. Many rural schools have few pupils over ten years of age. Tractor drawn implements run by twelve-year-olds are doing as efficient work on the home front as their big brothers and sisters are doing in the service. The honey crop of 1944 will be one which will show the enthusiasm and stamina of a new generation of beekeepers.

In this territory honey from several states is offered and sells rapidly. The mail is filled with letters offering to buy the 1944 honey, package live bees, full colonies, and queen bees. There will be little response to these requests as most of the beekeepers contracted for their entire output last summer.—H. B. Parks, San Antonio, Texas.

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COLORADO, March, 6

Weather: As we are gliding into the month of March, with the days fast lengthening out and becoming balmy, we again find ourselves entering into another link in the endless chain of time—another season with the bees. The winter slipped by, rather mild with comparatively few readings of zero or below. A moderate amount of snow fell on the plains except during February which was below normal in precipitation. Most mountain areas are well supplied with snow, some passes having a blanket nine feet deep.

The moisture that fell at the beginning of the winter put the soil in an excellent condition for the plants which should come out of their dormant stage in fine shape.

The condition of the bees in general is good. Continued mild weather

in February stimulated the brood-rearing and where ample supplies of honey are provided rousing colonies should result by fruit bloom time.

Miscellaneous: Retail grocers have been well supplied with honey during the past fall and winter—quite a contrast to conditions that prevailed a year ago when shelves were bare of this product. Sales are said to be slower, however, as the much cheaper corn syrups are putting up a stiff competition. There is little or no honey left in the beekeepers' hands except for a few who pack it for the retail trade.

Attractive prices for honey have stimulated many beginners to increase their holdings. Some of these enthusiasts who doubled their number of colonies and extracted them all but dry find to their sorrow that feeding sugar in place of honey is not the royal road to success.—G. A. Pauli, Pueblo, Colorado.

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LOUISIANA, February 29

Weather has been favorable with few cold days and many light showers which brought on early development of all honey plants and fruit bloom. Bees flew almost every day, finding much pollen and some nectar.

Miscellaneous: We have been extracting honey since the middle of February. Incoming nectar was so plentiful that bees were working up into the third super, filling in the empty spaces surrounding the unused winter stores of which there were ample surpluses. Perhaps we are too liberal in allowing for winter needs but it seems to pay well as we lost only two colonies this year—both of them destroyed by ants—strong colonies with brood in six and eight combs. We extracted 1800 lbs. of which about one third was new honey.

Some of this new crop was not well capped so the honey had to be processed before we dared to put it into our storage tank. This looks like bad practice but it is quite necessary under our system of leaving all supers on the hives all through the winter and we try to work with an average of three shallow supers per hive so as not to have too much empty space above the excluders during the cold weather—so, this early extracting is really a swarm-preventive measure calculated to avoid crowding during the opening of the flow in late March when we usually have many rainy days. Of course, we left enough behind to provide for possible late necessities.

This information may be of little value to most beekeepers but it is offered as a further argument in our contention that every beeyard presents its own individual problem which is often further complicated by the idiosyncrasies of the operator. It is true that beginners ask for and need advice but after a man has handled bees long enough to know something about the business he should be able to outline his own system. If he is satisfied, his system is "pretty good." If his operations bring satisfactory returns—IT IS PERFECT.

Our system may be all wrong but it saves much labor and does not seem to be unprofitable as our 1943 average was 226 lbs. per colony. How do YOU fare after following all of the expert advice?—Geo. W. Bohne, Luling, La.

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WYOMING, March, 6

Weather: February was our coldest month of the winter with the temperature down to ten below zero for two weeks. Snowfall for both January and February exceeded the normal slightly, but with an average rainfall of only 11 inches for the State we need considerable in excess of the normal, and there is still a general lack of moisture, but March and April can easily turn the trick for us.

Condition of Bees: So far both cellared and outdoor bees are wintering splendidly, and it is doubtful if outside bees have been confined to the hives as long as 30 days with out a flight in most localities. Winter loss so far, if any, is negligible.

Plants: Owing to lack of good snow cover, and temperatures fluctuating from near 60 above to 10 below, honey plants undoubtedly will be damaged some.

Honey sales have slowed up con-

siderable owing to more syrup and jams being available, also in this western country the diminutive packs in 1-lb. jars don't take the place of 5 and 10-lb. pails demanded by farm and ranch trade. It is to be hoped that the removal of these more practical sizes from present day markets which have moved a large volume of honey in pre-war days will not have a boom-e-rang effect when sugar rationing is lifted. And above all, let us stay out of the withering blight of rationing with our honey if possible.

Miscellaneous: With the lengthening of days we are reminded of the nearness of spring and the need of finishing up the repair work on equipment done through the winter months so that every possible effort can be directed toward the care of the bees. Labor shortage will be felt more keenly than during the '43 season. Wyoming beekeepers are pretty well braced for the season's tasks, and if Nature meets us halfway will be able to lend a good share toward the Nation's need of food, and in spite of war-time restrictions equal or surpass last year's production of honey and beeswax.—Earl C. Reed, Ranchester, Wyo.

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MINNESOTA, March 6

Weather: After one of the mildest and driest winters on record, we have had snow and rain lately. In January maple sap was flowing in eastern Minnesota and snow plows stood unused.

Bees: Colonies seem about normal in bees and brood, below normal in stores. The reason may be earlier than usual brood-rearing and more colony activity this warm winter. Thus far a high percentage of colonies is alive, but the final test of good Minnesota wintering comes in April and May when starvation threatens. With package bees hard to get, some hope for good spring weather so that strong colonies may be divided to make up winter losses. Early feeding may save many colonies.

Miscellaneous: Sweet clover acreage is unusually low, perhaps because of wartime need for cereal crops. Bare fields have not helped clover plants, and bee pasturage is increasingly a matter of grave concern.

In answer to a questionnaire, Minnesota beekeepers feel honey ceiling prices should be raised in line with increased costs, the 12c to 20c-plus spread is too much, this year the 12c price should be 15c, with only small adjustment increases in retail prices. Then, beekeepers would sell city packers at the going market (probably below ceiling), and the distribution problem would be considerably eased.

Some extensive beekeepers wintered in the South and will bring back package bees. (The rest of us enjoyed a southern winter up here.) Mr. and Mrs. C. S. McReynolds, of Clearbrook, attended the Winnipeg winter meeting.—Bruce L. Morehouse, Montevideo, Minn.

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ONTARIO, March 6

Weather: The law of averages is again asserting itself and as a result, the long period of milder than usual weather during the early winter, is now being followed by cold and stormy days with every likelihood of more such weather.

An editorial in the Toronto Globe and Mail a few days ago, stated that when all this snow melted there would be lots of moisture to penetrate the ground, as after such a mild winter there would be only an inch or two of frost in the ground. This just goes to show how ignorant some can be on certain things even when gifted with the ability to write editorials in a big city daily. We had several below-zero days before the snow came, and frost everywhere around the lower lake regions is in the ground to a depth of two feet or more. At our local cemetery, last week dynamite was used to break the frost when two graves were dug, and for over two feet from the surface the ground was like stone. Deep frost does not improve prospects for clover for freezing and heaving in the spring is the hardest on clover.

Conditions: Bees had a flight one day in late January, but no flights since that date. However, we do not anticipate heavy losses in wintering, where bees have ample stores. If we have to worry, possibly

our greatest danger is lack of bee pasturage, as this seems to be a leading cause for anxiety in the majority of localities, with of course some notable exceptions.

Ladino Clover: Last summer we mentioned at different times, the 12-acre field of Ladino clover near us grown for seed purposes. As we had quite an acreage of alsike as well as the Ladino clover, near the same apiary, and as yield of white honey was rather light, no conclusions were arrived at as to the honey value of the Ladino, except to note that bees were always working on it whenever they were on the alsike. We were over this field in mid-February and noted that the ground was matted with the plants so we are hoping to get more conclusive data this coming season as to the value of this giant clover to the beekeeper. We have had reports from such widely separated places as northern California and Maine, saying that Ladino is a No. 1 honey plant, and we surely do hope that it will turn out to be a help here in Ontario. It appears to be a very light yielder of seed and that no doubt accounts for the very high price, one dollar a pound or more, retail. Have tried to get some farmers to try it out as a forage crop, but all say the seed is too dear to take the risk.

Miscellaneous: Several beekeepers have recently asked us to try to get them some package bees for spring delivery. Needless to say, we have had to refuse such requests as about all shippers appear to have hung up the sign, "sold out for this spring." It is to be hoped that winter losses will be light, so that not so many packages will be needed. By the time these notes are in print, quite likely we will know more definitely as to losses and need of packages for replacement. If you have no packages booked for delivery, there is little chance of getting any orders accepted except for a very late date—too late to have the bees build up for a flow from alsike or white clover.—J. L. Byer, Markham, Ontario.

Beautiful but Dangerous

The mountain laurel (Kalmia Latifolia) grows profusely in the eastern mountains. While the bloom is very beautiful and attractive to the bees, the honey gathered is not fit for human consumption, coming under the head of poisonous honey.—Photo by Paul Hadley, Mays Landing, N. J.

Spinster Jane Says

Real winter is here at last, and it isn't at all surprising. It just could not stay spring-like all the time. And this sharp change makes us fear for the bees in the cellar. This morning (March 10) the thermometer kept down there close to the freezing point. Bees outside will possibly devour more of their stores than during the first part of the winter, because of the mercury's drop, but they are inured to changes in temperature, just as are folks who practically live and sleep outside, and should come through.

And fireweed honey is mild flavored! So say those who have proven it. It isn't to be classed with strong-flavored goldenrod and buckwheat honey. Well, one is never too old to learn, and the older we are, the more ready we should be to learn, even from males of our species. Two learned and practical beemen have stated this as a fact, and I bow before this much higher authority. It is an utter impossibility to "shoo" the bees into a fireweed pasture, impossible to "herd" them there. We get no pure honey from that source, only a mixture of flavors, hence my mistake. And in our late, mixed honey, clover strongly predominated, making a sweet, fine flavored, smooth, and more palatable than in other years.

We can tell dandelion honey both by the taste and by the smell. The various clovers are also easily distinguishable, but fireweed, we must become better acquainted with.

Bees do work on buckwheat bloom. In fact, a buckwheat field in bloom hums like a monster hive, but has no one else ever noticed that when working on these blooms, the bees are really bad-tempered? Instinct surely teaches them a great deal, and is it far-fetched to say that, after being robbed of their stores of clover honey, and with the cold, idle season nearing, when they will need food, and need it badly if they are to survive, they become desperate, work much too hard to gain their share of this nectar, and just like human females, worn and over-much tired, become cross and irritable. Wild animals and insects, too, do recognize the approach of winter, and make preparations for it, and besides, there is keen competition as thousands of other hive workers are carrying away big loads to their storehouses.

Let me give an example of what this does to human female workers: Last year was a wonderful blueberry year. We know of several families with a number of work-age children who made as much as a thousand dollars, picking and shipping these berries. One such large family, living a good nine miles away, having exhausted the supply at home, swooped down upon the supply depended upon by the community here for their winter supply, parked their car near, and swarmed into our special "patch", practically cleaning it up. And were we women-folk mad! Now we can sympathize with the bees.

The very last supply of last year's honey, with one or two purchasers, soured and spoiled, Boy replacing it in some cases. He laid the blame on where it was stored, but it may be that it was not properly ripened. However, we ate ours first (showing a bit of Scotch canniness) and kept the best for the last. And isn't that the way it should be? Does not the delicate dessert come last? The dose of bitter medicine comes before the spoonful of honey; hard experience comes before sweet success; honestly-earned wealth comes after much labor. Isn't this the best way?

Once again, though I believe I am simply repeating myself, I must thank the use of honey for warding off colds this winter. It surely builds up resistance, as there has been only one person taking a cold so far this winter, and we give the credit to honey. It was on our table three times a day, breakfast, dinner, and supper, and if we didn't put it on, the man of the house asked for it. It surely has a vitamin content, and, though vitamins have been publicized a few years, the knowledge of their value is extending the period of years in a lifetime.

And now, speaking of rationing: Holy Writ says, "It is more blessed to give than to receive". Are we not, by doing without certain luxuries, merely giving them to those who need them more than we do? If cheerfully given, we can claim both God's love and a blessing.

Editorials

Some poorly processed, off-grade honeys are reaching grocers' shelves, according to reports received recently. Furthermore, cheap syrups are said to be offering a stiff competition to honey in some areas. We do not worry about cheap syrups but we **are concerned** about dirty off-grade honeys that are bound to undo some of the splendid work done by the **American Honey Institute** in popularizing honey and perhaps jeopardizing the future of our industry. **Let's see to it that good clean honey reaches our customers.**

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Winter or spring losses, which? We will have to admit that the latter are often much greater than the former. Bees may show up fair prior to the first of March and then dwindle down to a few good colonies—the rest either dead or as good as dead, showing a few bees swollen with dysentery. It is too late to save them then unless packages are used. Intelligent management should have been given last fall. Colonies in October or November should be strong enough to occupy a two-story hive, with plenty of honey and pollen and adequate protection.

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OPA Recognizes Importance of Bees The introductory remarks in an O.P.A. radio address made by Walter Straub, Director of the Food Rationing Division, on February 19th over the National Farm and Home Hour, Blue Net Work, are of interest to the beekeeping industry because of his reference as an O.P.A. official to the importance of bees, also his former connection with the industry. Many people in the beekeeping industry know Mr. Straub from his association with the Lake Shore Brand of honey which he sold last year to the H. J. Heinz Company. Mr. Straub was named Director of the Food Rationing Division of O.P.A. by Chester Bowles last fall.

While Mr. Straub's talk was concerned primarily with the subject of rationing it is interesting to note his introductory remarks and his reference to the importance of bees for pollination purposes, especially because of the broad coverage of his talk in the farm areas.

Mr. Straub also said that there is actually no surplus of sugar anywhere in the world which is available to the United States or to any of the Allies. He pointed out further that sugar is needed for industrial alcohol to be used in the production of powder and synthetic rubber. This takes about 20% of the entire quantity of sugar needed to feed the people of the United States. Also, the sugar secured from the beet crop for 1943 was rather disappointing. It was 700,000 tons short of the previous year.

In view of these facts there devolves upon beekeepers the urgency of producing the very maximum crop of honey during 1944.

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Pollen Substitutes Herald, Perhaps, a New Era In Beekeeping. It is well known that in many localities there is a shortage of pollen in the spring just at a time when it is most needed for brood rearing. The remedy to save the crop is either move bees to localities where there is pollen, or use a pollen substitute. A shortage of bees at the time the main honey flow comes in, will mean either a light crop or no crop at all.

The package men of the South may find that the use of a pollen substitute is the panacea for which they are looking.

It is too early yet to swing our hats in victory, but this pollen substitute is worth trying. (See page 143 of this issue.)

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Honey Rationing and Package Size Limitation As discussed in last month's Gleanings (page 100) the question of possible rationing of honey, or a limitation of the pack size, has been under discussion in the industry as well as the Honey Industry Food Advisory Committee of the War Food Administration since January. We are informed that a poll of the Honey Industry Food Advisory Committee brought a slightly negative response to limiting the pack size and for this and other reasons shown below the War Food Administration reports that no action be taken to recommend a restriction of the glass container sizes as a means of inducing wider distri-

bution of honey through urban channels. The decision is based on the following factors according to a report from the Honey Industry Food Advisory Committee:

1. When the limitation of sizes was first proposed to the National Honey Association it was as an alternative to the rationing of honey. We are now informed by the Office of Price Administration that there is no immediate prospect of honey rationing. Incidentally, no one on the Honey Industry Food Advisory Committee was in favor of rationing.
2. The announced purpose of the size-limitation proposal was to channel more honey to the urban centers, through the medium of commercial packers. Just recently reports have reached us from many parts of the country to the effect that honey is moving slowly in city markets. In most cities, it appears that because of the sudden deluge of corn sirup and refiners' sirup mixtures at one half to one third the price of honey, which customers are buying instead of honey, even the light stocks are ample for the curtailed demand. Various chain stores, for example, are reported as requesting release from packers for allotments, previously agreed to, of bottled honey.

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Royal Jelly Formerly it was believed that this condensed milk-like substance was fed to all bee larvae up to three days. At the end of that time, all larvae to become worker bees, it was claimed, were fed a coarser food less nourishing, and that all larvae destined to become queens, were fed this same royal jelly clear through their period of growth in larger cells.

Haydak now offers the opinion that this wonderful change from a three-day-old worker larva to a fully developed queen in 16 days instead of 21 for a worker, may be due, not to the **quality** of the food, but to the **quantity** in what he calls "mass feeding" to the royal mother to be. This will mean that royal jelly is fed both to worker and queen larvae. The latter is fed lavishly, so much so that an abundance of royal jelly is left in the cell after the queen emerges. The worker larvae while fed the same food receives it intermittently up to the sixth day when it is sealed up. On the other hand, the queen larvae is fed all it can take before sealing and then can thereafter draw from her larder of food and still have enough left.

It is perhaps too early to draw definite conclusions, but there is much to support this hypothesis. The reader is referred to Haydak's paper just released, No. 2091, Scientific Journal Series, Minnesota Agricultural Experiment Station, St. Paul, Minn., by Mykola H. Haydak, Division of Entomology.

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Deferments of Agricultural Workers Reviewed The National headquarters of the Selective Service System is asking local boards to review deferments of all agricultural workers. Up to the present time deferments have been granted workers having farm credits producing eight or more war units. The policy from now on will be to make sixteen war units as the national objective as a basis for deferment. Local boards are given some flexibility considering the deferment of a registrant; age, health, or other compelling circumstances involved in the individual case also have a bearing. Where the production of sixteen war units a year does not give full employment the State directors of Selective Service will be authorized to recommend to their local boards that the sixteen unit national minimum be increased.

Those registrants deferred now in class 2-C, deferred solely by reason of their agricultural activities, will be reviewed first. After completing the review of class 2-C, class 3-C will be reviewed. This class includes those deferred because of their agricultural endeavor as well as having dependents. Eventually class 3 will be eliminated. Dependency as such no longer calls for deferment of Selective Service registrants.

On the basis of 25 colonies equalling one war unit, 400 colonies of bees would be required to defer one full time agricultural worker. Bees are used in combination with other agricultural crops to develop the sixteen units. Recently the Selective Service has defined a baby nucleus for queen-breeding purposes as a colony of bees in figuring war units.

Unsung Heroes History discloses that long-drawn-out wars are often lost by reason of a shortage of food. In the win-the-war hysteria of the present day, there is danger in the urge to fill certain military quotas, of bearing down so hard on local draft boards that vitally needed workers will be taken from the farms, the orchards, the poultry ranches, and last but not least, the apiaries. Agriculturists in all branches are struggling to produce, with a greatly diminished supply of new equipment to replace that completely worn out and beyond repair. It will be a great mistake to rush most of the young men into service from the farms and to expect the fathers and daughters to keep on producing.

Facing an acute equipment shortage of all kinds, farmers rose to the occasion magnificently and by stretching their hours of labor, not from eight to ten but from the customary dawn to dark, to sixteen and eighteen hours, produced great crops. This very fact may have convinced W. M. C. that farmers' pleas were exaggerated and that they were capable of getting along somehow if they had to. But, while admitting the great work of the American producers who are never decorated with medals, surely it is time to point out that, since this country must continue to send trainloads and shiploads of food to the allied nations, farm workers are needed. According to a survey by the Bureau of Agricultural Economics, there were more than 150,000 fewer men working on farms in 1943 than in 1942.

It would be a strategic error to run out of seed, just as we are winning the war. Therefore, the experienced sons and other helpers in the bee yards should be on the job to insure bees for adequately pollinating fruit, vegetables and legume blossoms. Right now there is an acute shortage of package bees. A honey producer writing to a dozen bee shippers has not received a single assurance that his modest order can be filled. The shippers are overloaded with orders and besides they lack help. Untrained help is of little value.

Farmers are not asking for medals, publicity, or thanks but they are pleading for enough help to keep on producing vitally needed food. After all, food is just as necessary to win the war as guns, tanks, and planes.

Charcoal Filtering Under Ban In general there are three plans in use today for meeting shortage of raw material.

(1) Using inferior substitutes hoping to avoid complaint on the ground that the public expects subquality in war time.

(2) Using the best substitute available and frankly acknowledging the fact.

(3) Making no change and for the sake of the reputation of the product, announcing a temporary shortage.

The temptation to substitute is strong, especially if the buying public seems to prefer something lower in quality rather than nothing at all. But the concern that looks to the future, to protect its honest reputation, will either admit the substitution or deliberately sell only when stocks of high quality goods are available.

Producers of honey under conditions today cannot condemn importations of foreign honey provided the honey is sold for what it is. It is no more objectionable for foreigners to export honey into this country during a sugar and honey shortage than for producers in this country to export honey to a foreign country during a shortage there.

The danger lies in the denaturing of poor quality or even unsalable honey, either foreign or domestic, and selling it as good honey. Filtering very dark honey of objectionable flavor through charcoal until both color and flavor are removed, whether done in this country or a foreign country, raises a question unless the product be sold for what it is. To argue that some people do not like the taste of strong honey is beside the point. Can denatured charcoal filtered honey, with color and flavor removed, be called honey?

L. D. Elliott Acting Commissioner of Food and Drugs, on Feb. 14 1944 writes:

"It would not be proper for a packer in this country to mix with honey any 'carbon-filtered honey' which had been so treated as to lose its identity as honey, and designate the resulting mixture as honey."

Moderate filtering really no more than efficient straining is not here questioned, or honey so treated is not a threat to the reputation of the product. Extreme filtering through charcoal until the flavor is all gone is another thing.

American Honey Institute News Notes

By Harriett M. Grace

Extracts from talks by the Director:

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Food is the most important single commodity and feeding human beings is one of the greatest sciences.

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I am not pessimistic about post-war honey. Pessimism spells defeat. Optimism means victory.

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Process honey carefully so as to preserve its nutritious qualities.

• • •

Our information for consumers should be scrupulously prepared in labelling, recipes, and in advertising.

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Distribute honey widely so that it will be available everywhere at all times. Keep the word Honey ever before the public.

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A quality product will pay dividends for years to come.

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Honey forms a comradeship with hot rolls to make Damon and Pythias look to their laurels.

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To replace all of the sugar in a cake or cookie recipe with honey, use ⅛ teaspoon soda to a cup of honey. An excess of soda has an unfavorable effect on both the flavor and texture of baked products. When only part of the sugar has been replaced with honey use little or no soda.

• • •

Keep honey on the store shelves now and it will find a permanent place in the home when this global war has ended.

• • •

Package honey so that it will reach the consumer in perfect condition.

• • •

Let us avoid selling honey just for today. Plan for future business throughout the years.

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When business is bad, the business man must be better. Intelligent energy must be applied.

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Let us provide a financial backlog for post-war activities.

• • •

There is real merchandising value in the word Honey.

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Nature never intended that we should live on refined foods.

Nature is farseeing in providing for our needs so one would naturally expect the product of the bee to contain Vitamin B.

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Just as honey is good for all ages, so it is good for all hours of the day—from breakfast to the midnight snack.

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During the last war we were just beginning to recognize the value of the use of natural foods.

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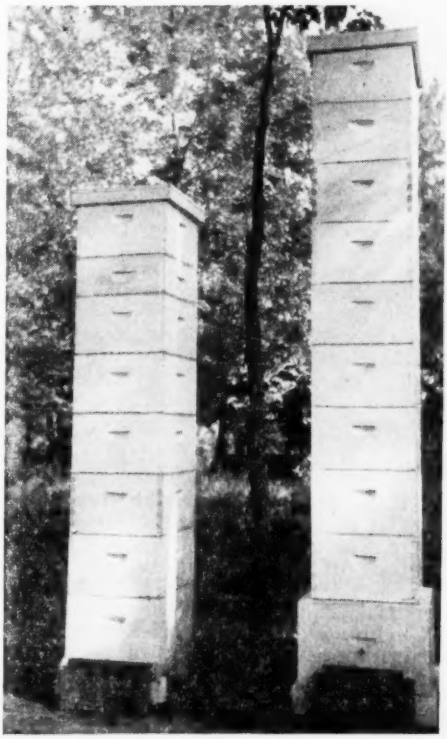
We shall try to meet each new problem with new resourcefulness and put forth an ever-increasing effort for the status of the American Honey Institute.



Let us hope such sky scrapers may be common this season.—Photo by W. T. Glesozinski, Marshfield, Wisc.

Just News

The Middlesex County Beekeepers' Association will assemble Saturday evening, April 29, at 7 P. M. at 19 Everett St., Concord, Mass. Mr. Perley Smith will recount his observations on beekeeping made in the South this winter, and the Ladies' Auxilliary will set on a hearty bean supper with green salads, bread, comb honey, pickles, honey squash pies, cheese, and coffee. This is the annual meeting for election of officers, payment of dues, and planning summer meetings. Those who cannot be present will mail $2 family membership dues to Mr. Chester A. Robinson, Treas., 105 Horace Road, Belmont, Mass.—A. M. Southwick, Pres.

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The Douglas County Wisconsin Beekeepers' Association was formed recently with H. N. Chamberlin, President, Elvin M. Braman, Vice-Pres., Karl Helwig, Technical Advisor, and Carl Peak, Secretary-Treasurer.

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"Illinois Honey and Pollen Plants" is the title of a 10-page circular by V. G. Milum, a contribution from the Department of Entomology, University of Illinois, Urbana, Illinois, as of November, 1943. It lists the major honey and pollen plants of Illinois, with blooming dates, also characteristics of honey.

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The New Rochelle Beekeepers' Association will hold it's regular monthly meeting on April 16, at 2:30 P. M. Our Secretary-Treasurer, Mr. James A. Bailey, will notify members by mail as to exact place of meeting. Package bees and spring care will be the topic for discussion. —S. Barnes.

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E. S. Prevost, Extension Bee Specialist of Clemson Agricultural College, Clemson, South Carolina, is the author of a new bulletin on "The Care of Bees", Circular 153. In very concise language the information that a beginner needs is given regarding the inmates of a colony of bees, the need of good hives, methods of transferring, spring management, requeening, swarming, feeding, etc. An excellent illustration of an easily constructed sun beeswax melter is given on page 14. With the shortage of labor, with the danger of fire when melting beeswax on a common stove, producers everywhere should make use of that great convenience, the sun melter for scraps of burr comb, cappings, scrapings, etc. Mr. Prevost stresses the advantage of plate glass or two or three thicknesses of ordinary window glass. The box may be made of wood, almost any size, lined with black iron and a screen to hold back the refuse, and with a space underneath for a pail to catch the liquid wax that melts by the stored up heat of the sun. Here is a device that requires almost no attention, that costs very little and that turns almost useless waste into a product worth almost a thousand dollars a ton.

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South Dakota Beekeepers' held their winter meeting on Feb. 21. Our bee pasture is confined to the Black Hills district and a few counties along the eastern border. Honey market and bees were not stressed, as most beekeepers in South Dakota are more concerned about what move the Soil Conservation program people are planning. Many changes have occurred in the last 40 or 50 years. Some parts of the state changed from raw prairie to dust storms due to misuse of our soils. Sweet clover is not as popular among farmers as it was 15 years ago. But legumes are a part of the crop rotation and we still hope to see it used in balanced agriculture.—A. G. Pastian, Brandon, South Dakota.

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John Dearborn Taylor of Chandler, Oklahoma, died recently. He lacked only eight days of being 84 years of age. He was born in Bloomington, Ill. and made the 89'ers race into Oklahoma for a homestead. He always kept a few hives of bees and was a member of the first beekeepers' association organized in Oklahoma. His sons, L. D. and O. L. Taylor, own and operate 4000 colonies of bees in Harlan, Iowa and a bottling plant in Chandler, Oklahoma.

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The annual spring meeting of the **Arkansas Valley Beekeepers' Association,** will be held Saturday, April 8, at Wichita, Kansas. The meeting will be called to order promptly at 10 a. m.—Leroy Churchman, Sec.

The Washington State Beekeepers met at the honey packing plant of Mr. J. Arthur Thompson at 1530 Center Street, Tacoma, Washington, on Feb. 19, 1944. Mr. L. M. White of Portland, Oregon, gave a report on his work in Washington, D. C. A good number of beekeepers were present, especially from central Washington. New officers are; Orval Wixom, Wapato, Wash., President. Mr. J. Arthur Thompson, Tacoma, Vice-President, R. L. Longanecker, Wapato, Secretary-Treasurer.

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The Fulton & Dekalb County (Ga.) Beekeepers' Association was organized on August 24, 1943 with a membership of 34 beekeepers, and now, six months later, has an active, enthusiastic membership of 65. Our objectives are to make better beekeepers of ourselves and our neighbors through the interchange of knowledge gained from experience in the use of standard equipment and the adaptation of basic principles to conditions "in this locality"; to stimulate public interest in honey, and, in short, to promote everything that will help the industry. We meet on the third Tuesday in each month and will be delighted to welcome beekeepers from other sections whether they be carload producers or backlotters. Visitors are cordially invited to contact Secretary L. C. Dotson, Haas-Howell Bldg., Atlanta. We are in the bee picture to stay, and to do our full part in supporting whatever enterprise is best calculated to further the interests of the whole industry, and we want to meet our friends.—O. H. Pendley, Chairman, Publicity Committee.

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The annual spring series of radio chats for beekeepers will begin over WOI Monday, April 3rd at 6:50 a.m. and continue each week from thereon.—F. B. Paddock, Ames, Iowa

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The Arkansas Beekeepers' Association met March 6, 1944, at North Little Rock. Dr. W. J. Baerg, Dept. of Entomology, University of Arkansas, and Paul H. Millar, chief inspector of the Arkansas State Plant Board, appeared on the program. The Association is for the uniform 2½-inch cap for five-gallon cans and against honey rationing. Officers are Homer W. Richard, President; Vaughn Wilson, Vice-President; and Irvin E. Nantze, Secretary-Treasurer. The annual meeting will be held November 25, 1944, in greater Little Rock.

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The annual short course for beekeepers will be held at Ames on May 18th and 19th. Professor W. E. Dunham of Ohio State University will be the guest speaker.—F. B. Paddock, Ames, Iowa.

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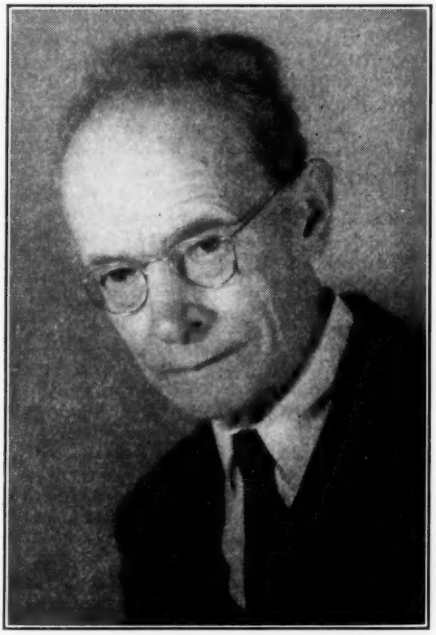
The Michigan State Beekeepers' meeting will be held on April 6, at the Court House in Adrian. Dr. W. E. Dunham and State Inspector Chas. Reese of Ohio will be the out-of-state speakers.



HAROLD C. WEST

Mr. West recently passed away after a service of 49 years in the printing department of The A. I. Root Company. During the last 25 years he was foreman of the department.

He was loved and respected by all his fellow employees. Although his work was unseen on the pages of this journal and of the ABC and XYZ of Bee Culture, nevertheless it was a necessary factor in getting this work done.

Talks to Beekeepers

By M. J. Deyell

April is one of the most important months in apiary management, especially in this latitude. It is during this month that heavy brood rearing begins.

In parts of the South, a major honey flow has already occurred and in the orange regions beekeepers have already secured surplus honey.

What Are We Aiming At? A few years ago I was out hunting rabbits and pheasants. I had walked quite a distance through the woods and blackberry briers, without getting any game. As I was about to call it a day and leave a low spot near a railroad embankment, across from one of my apiaries, a large cock pheasant flew from under my feet. As usual, I became petrified, as I had forgotten for the moment how much noise an old cock pheasant can make. When I regained my senses I pointed my gun in the general direction of the flying pheasant, as he went over the railroad embankment, then pulled the trigger. And why didn't I get the bird? Because I didn't take time to aim correctly.

More than once I have thought of that experience in connection with beekeeping. One reason some of us do not secure maximum crops of honey is because we fail to take time to aim correctly at our objective.

Now here I am with about thirty years' experience with bees, and I'll have to admit that during the years I have never realized as I have during the last year, how important it is to have colonies of maximum strength, boiling over with bees, at the proper time, the beginning of the major honey flow.

It is one thing to have strong colonies and it is another thing to have colonies with a proper percentage of bees of the honey gathering age.

Correct Timing Essential. Each beekeeper should take time to find out what minor and major honey flows occur during the season. For example, in the region surrounding Medina, bees begin to collect pollen from willow, elm, maple, and other sources, early in April. Later on, about May first, pollen and nectar are gathered from dandelions, which continues until the middle of May. There is a time between the spring and the summer honey flow when bees make a scant living. Wild mustard, blackberry, and a few other minor sources are all the bees have to work on until the major flow from alsike and white clover starts about the tenth of June.

This is not a sweet clover area, therefore, the main flow, if and when it does come, is rather short. This means that colonies, in order to secure the maximum crop, must be very populous to take advantage of a flow that lasts about a month.

In western Ohio we have a somewhat similar set of spring conditions. In that region, however, the major flow usually continues from June tenth until early August.

In the Medina region there is usually a fall honey flow which begins during September and lasts until early October. In western Ohio there is no fall flow of any consequence.

This means, then, that we must manage colonies differently here than we do in western Ohio. In this locality all colonies must be right up to the peak of strength at the very beginning of the major flow. In western Ohio colonies that may not be quite up to this peak, will soon get there, because the main flow lasts longer.

The Development of a Strong Colony. Apparently some do not realize how long it takes to develop a worker bee of the honey gathering age, from an egg. An egg that is laid in a worker cell ordinarily develops into an adult bee and emerges on the

twenty-first day after it is laid. Many fail to realize that this young bee does not become a fielder for almost three weeks after it emerges from the cell.

Young Bees and What They Do. According to Dr. Rosch, who did some valuable experimental work years ago, the main duties of young bees are:-

(1) "From the first to the third days they prepare the empty cells for brood and assist in incubating it by maintaining necessary temperature;"

(2) "From the third to the sixth day they feed the older larvae with pollen and honey;"

(3) "From the sixth to the tenth or fifteenth day they feed the younger larvae with larval food - now generally considered to be a special secretion of the tharyngeal glands which are in a state of activity in bees of this age;"

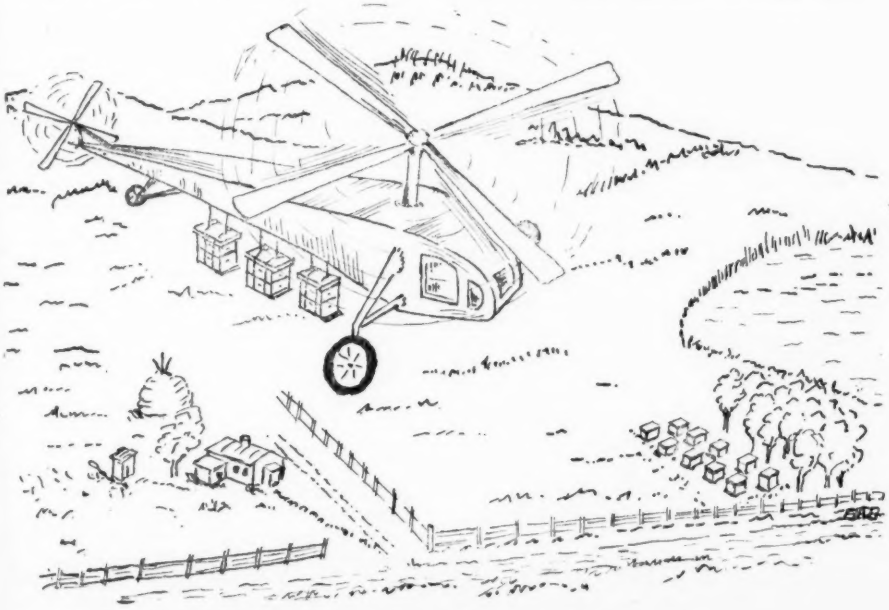
(4) "From the tenth to the twentieth day they are engaged in various domestic duties including receiving and ripening of honey and secretion of wax."

It will thus be seen that almost six weeks are required to produce a full-fledged bee that is a fielder, ready to gather nectar.

How to Produce Populous Colonies. Each colony should have a **good queen, good combs, an abundance of stores,** which means plenty of **honey** and **pollen** and ample **comb space** for brood rearing and the storage of incoming nectar and pollen. It seems important also to leave packing on the hives, if possible, until settled warm weather comes. We perhaps overlook the fact that the temperature of the brood nest must be around 94 degrees F. before brood rearing can proceed. Protection helps the bees to maintain the correct temperature within the hive. As a matter of fact, protection during the early spring months appears to be just as important as winter protection.

It is important, therefore, to check each colony thoroughly, preferably during the spring honey flow to see that all of the requirements just mentioned are present. All failing queens that are old, wobbly, and greasy in appearance should be removed and replaced by young laying queens.

Any crooked combs, with stretched cells, should be removed and replaced with good combs. If a colony has less than fifteen pounds of stores, more food, either combs of honey or thick sugar syrup, made from two parts of granulated sugar to one part of water, should be supplied.



The helicopter for operating outyards during wet weather.

It is usually necessary, during the dandelion and fruit bloom honey flow to put an extracting super of combs on each colony to make room for incoming nectar. As a rule, however, this newly gathered honey is used up for brood rearing. In some regions, however, strong colonies store some surplus from dandelion.

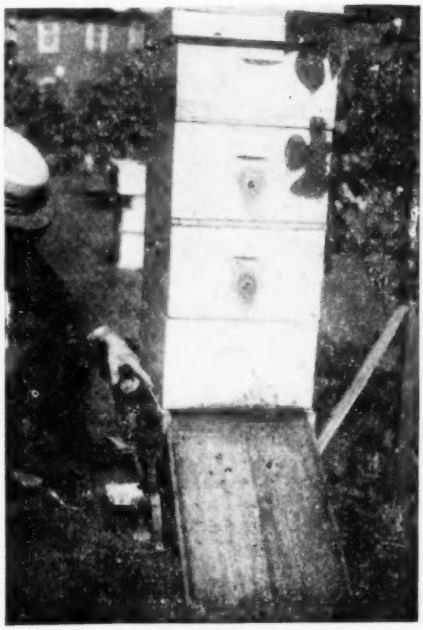
Helicopter Needed for Out-Apiary Work. Last spring, due to very wet weather, we were unable to reach some of our out-apiaries by truck. We were forced to carry supers, and in some instances, sugar syrup, from the main road through muddy lanes, to the apiaries, and that is real work.

As we struggled along through the mud, I had a glimpse into the future, when the airplane of the helicopter type may be used. Aviation experts tell us that the helicopter will soon be in everyday use. These authorities say that it will handle as easily as a motor car. It can be made to ascend and descend vertically; it flies backwards or sideways as readily as forward. The helicopter could be loaded at the apiary house, with supers or sugar syrup, then made to ascend and fly to the out-apiary. Instead of taking the tops off trees in attempting to land, it can be made to stop directly over the apiary, then descend right in the middle of the yard, between the rows of hives. What a convenience that will be!

It seems reasonable to assume that in the near future some apiaries will be moved from north to south in the fall, then back in the spring. There should be no trouble in providing ample ventilation enroute.

Bricks for Hives. In a recent talk, I mentioned putting a brick on top of each hive cover. I still do this. It is surely a convenience. Two days ago I visited my own apiaries near Medina. The hives were hefted. Some of them felt rather light, although not dangerously light. I set the brick up on edge on hives that were somewhat light. Before leaving I glanced over the apiary and could tell easily which hives might need feeding later.

Record Tags. I use a wooden tag, 5½ inches long, 2½ inches wide, and ⅞ths inch thick, with a hole in one end. This is hung on a nail driven into the front of the hive. The tag will contain records for the entire season. We use an abbreviated code, which is well understood by our men. One advantage is that the tag can be painted between seasons and used over and over again.



Alighting boards help the bees coming in with their load of nectar.

Killing Grass in Front of Hives. It seems that grass grows faster in an apiary than it does anywhere else. I hate to see bees struggling to get into hives, because someone has failed to remove the grass from hive entrances. As a matter of fact, such a condition is bound to cut down on the amount of surplus honey stored if hive entrances are clogged badly.

We have used salt. This does fairly well, although one needs to use a considerable amount and apply it quite early in the spring to thoroughly kill the grass. If it is only partially killed, fresh grass begins to grow toward the end of the season.

We have tried a weed killer. This is the most effective of anything with which we have experimented so far. We simply mix this weed killer with water, as directed, 40 to 1, then pour it with a sprinkler, around the hive, especially at the entrances. It certainly does a thorough job.

Some beekeepers place alighting boards in front of hives as shown in the picture. Such boards do help bees to enter hives easily with loads of nectar and pollen.

SIFTINGS—from various sources

By the Editors

Realizing that all worthwhile information on beekeeping is not found in one bee journal, we are sharing with our readers some notes gleaned from other bee journals, back issues of Gleanings, and bee books.

"The origin of the art of beekeeping is hidden in the mists of antiquity."

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"The best bee for anyone is the bee fittest to survive and give the highest possible average of production with continuous regularity in the particular region of the proprietor."—October, 1924 "Irish Bee Journal."

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What did she mean? "Give me a pound of those grapes. My husband is fond of them. Do you know if they have been sprayed with any kind of poison?" No, ma'am, you'll have to get that at the drug store." February, 1944, "Australian Bee Journal."

• • •

Sending bee eggs by mail. "Dr. Lundie has been sending Italian bee eggs by post and good queens have been raised from these. This is a new departure and the writer has never seen any reference to it in any bee publication." W. Aird, page 13, January, 1944, South African Bee Journal. [Note: The late A. I. Root sent bee eggs by mail years ago, along in the seventies. This project was not overly successful and was abandoned.—Editor.]

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The amount of nitrogen laid down by various legumes, such as sweet clover, alfalfa, and red clover, varies according to locality, but, according to one authority 50 to 75 pounds per acre is a conservative estimate.

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Two-story wintering in 1866-67. The April, 1867, "American Bee Journal and Gazette" contains a short article by M. M. Baldridge, St. Charles, Illinois, regarding his wintering a colony in a "two-story frame hive on the west side of a building, otherwise unprotected." He writes, "For large yields of honey we prefer the two-story hive in this locality." And that was seventy-seven years ago.

"Many queens are considered poor, but in fact never had a chance to prove their value, because of some beekeeper's failure to provide proper conditions."—October, 1924, "The Bee World."

• • •

"Bees never store pollen in drone cells."—March, 1861, "American Bee Journal."

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L. E. Snelgrove, Bleadon, England, author of the book "Swarming—Its Control and Prevention", points out the fallacy of the notion that destroying queen cells once every seven days will prevent swarming. If bees select a young larva that has just hatched from an egg the resulting queen cell will be capped five days later, and, as Mr. Snelgrove says, the "every-seventh-day" beekeeper will lose his swarm. Therefore, destroying cells every five days would seem to be necessary to stop swarming. In some instances swarms will issue before queen cells are sealed over which shows that destroying queen cells is not an infallible measure for swarm prevention.

• • •

The season of 1872 must have been a good one in Michigan, as the first issue of Gleanings in Bee Culture, January, 1873, contains an item from Henry Palmer, Hart, Michigan, as follows: "That swarm that had given 400 lbs. when I wrote you, has since given us 100 lbs. of fall honey, making a good 500 in all. Our surplus will not come much, if any, short of 3000 lbs. from 11 swarms."

In the same issue Prof. A. J. Cook of Michigan Agricultural College reports $80.00 profit from a single hive that season.

• • •

"A. Bagdanoff writing in 'Deutsche Biennenzucht' on scale hive observation, notes that the effects of an inspection of a colony lasts for three days. The beekeeper loses at least one whole day's nectar yield, a fact which few realize. [Beginners should be told never to open a hive unless this is unavoidable and to keep—after Gerstung's plan—a stock to ill use if they must practice handling bees and indulge their natural curiosity.]" November, 1937, "The Bee World."

Asked and Answered

Uniting Colonies

Question.—I want to unite two single-story colonies of bees to make a two-story colony with one queen. What should be done in regard to the queens? Should the weakest one be killed or will the strongest one survive?—Walter Irvin Schwaninger, Md.

Answer.—Two colonies of bees occupying single-story hives may be united by setting one hive on top of the other hive, putting one thickness of newspaper between the hives. This uniting should be done late in the evening after bees have quit flying. It is well to punch a few holes with a lead pencil through the paper, in order that the bees in the upper hive may get some ventilation from below. In time, the bees will gnaw away the paper and gradually unite. Some of the old bees from the hive that has been moved will go back to the original location but not finding any hive to enter, they will go into other hives. Another method of uniting consists of feeding each colony all the sugar syrup the bees will take, then setting one hive on top of the other, without a newspaper. It is preferable to do this during a honey flow. In either case, one queen will be disposed of and the other retained. The bees know best which queen should be kept.

Single vs. Double Brood Chambers

Question.—Double brood chambers are probably a necessity in regions where bees store a surplus of 100 pounds and upwards but in my locality where we (who do not practice migratory beekeeping) can count only on an average of around 50 pounds surplus, would a single brood chamber be sufficient? In other words, can a queen produce enough bees in a single 10-frame hive body to store 50 pounds surplus in the supers?—D. F. Owen, California.

Answer.—The double brood chamber, sometimes called the food-chamber hive, is calculated to provide ample comb space for brood-rearing, the storage of ample honey and pollen, also clustering space for a large colony of bees, except during the time surplus honey is being stored. It is a fact that the standard 10-frame, single-story hive will hold the brood that one queen will produce. However, there is not sufficient space in the single-story hive for needed food, which is honey and pollen, also space for brood-rearing, at the height of the breeding season. That is why a two-story, or, double brood-chamber hive is recommended. As a matter of fact, some commercial beekeepers are now using a three-story hive to house each populous colony during the winter and early spring months. This third body is needed quite early in the spring to prevent overcrowding.

Scum on Top of Bottled Honey

Question.—What causes a white scum to appear on the top of my honey after bottling?—Bert A. Ellis, N. Y.

Answer.—It might help some to remove the scum when it has accumulated on the surface of the honey after it is heated, then, after the honey has been allowed to cool, heat it again to at least 130° Fahrenheit and bottle the honey while hot. The scum usually consists of fine particles of air, also some foreign matter which, being lighter than honey, rises to the surface. Heating the honey will give the particles of air, also the foreign matter, a chance to rise to the top. Time must be given for the air and small particles of foreign matter to travel to the surface. Allowing the honey to cool, then heating again just before bottling will lengthen the time for clarification.

What About Hybrid Bees?

Question.—Are crosses of Italian, Caucasian, and Carniolan bees of worse disposition and therefore harder to handle than pure bred races?—F. A. Oliver, N. Dak.

Answer.—The concensus seems to be that hybrid bees are crosser and more difficult to handle than pure races of bees. The first cross between two races may not be objectionable. As a matter of fact, this first cross may be better for honey gathering than either of the races from which the cross would be obtained. However, further crosses, as a rule, are objectionable.

What to Do With Frames of Granulated Honey

Question.—I have about 70 shallow frames of granulated honey. Would you kindly please inform me as to how I could separate the granulated honey from the wax in the frames?—Rev. Stephen Papmeder, Penna.

Answer.—It is very difficult, in fact, practically impossible to get granulated honey out of combs without damaging them. One might put the combs in a hot room long enough to partially liquefy the honey. This procedure might melt the combs if they were subjected to a temperature sufficiently high to melt them. The

melting point of wax is approximately 143 degrees Fahrenheit. Bringing the combs of granulated honey to this temperature would have a tendency to stretch the cells of the combs. You perhaps do not have a hot room that could be used for this purpose. Granulated honey in combs can be utilized for bee food after settled warm weather comes. The temperature of the hive, also the warm weather, will gradually melt or liquefy the granulated honey. Possibly, you may need this honey for bee food this coming season. If you do not need this honey for bee food and desire to separate the wax from the honey, you can cut the combs out of the frames into an open topped metal container, then place this container in a boiler of hot water. In due time the mass will become liquid. When you let it cool, the wax being lighter than honey will form in a solid chunk on the surface. This can be removed from the honey which remains below.

Safe Method of Introducing Queen

Question—I am expecting a queen to arrive the first part of April. I intended to give her to a cross colony with a hybrid queen, but if it isn't too early in the year I am wondering if it wouldn't be safer to start a nucleus?—Mrs. J. R. Kay, Oklahoma.

Answer.—If your colony occupies a two-story hive you could remove a few combs of brood and honey with the old queen, placing these in one hive body on a stand nearby, or, above the inner cover, giving the bees an entrance to fly out. The old bees would, of course, go back to the parent stand which would have some combs of brood and honey. In nine or ten days all of the cells started in the queenless brood chamber on the old stand should be carefully destroyed. The new queen should then be introduced. The bees having no young larvae from which to start cells would likely accept the new queen. In due time the old queen in the hive above, or, on the separate stand, could be destroyed and this hive united with the hive containing the new queen, by placing a single thickness of newspaper between the two hives, punching a few small holes in the newspaper to admit some air to the bees above. In due time the bees will chew away the newspaper and the two lots of bees will unite. This is one safe way to introduce a queen. The advantage of setting the old queen aside is that she is held for a possible emergency in case the new queen might not be accepted.

Requeening Without Dequeening

Question.—Is there any known successful method by which hives can be requeened without dequeening on a large scale?—R. Summerfield, Ontario.

Answer.—One way to requeen without dequeening, on a large scale, is to use the upper brood chamber, sometimes called the food-chamber, for rearing a queen during the time the surplus honey is being gathered. To do this it is necessary to have an extra bottom board and cover for each colony, or place this food chamber on top of the pile of supers, above an inner cover with an entrance made to permit the bees to fly. When the food chamber is set off onto a hive stand beside the parent hive, or placed on top during the honey flow, the bees will usually rear a queen in about three weeks. If there happens to be some queen cells in the food chamber, all the better. Some time will then be saved in rearing a queen. At the end of the honey flow, or, in the fall, any time during September, after surplus is removed, the food chamber containing the young queen may be placed on top of the brood chamber containing the old queen. The old queen will be destroyed and the young queen will be retained, except in very rare cases. It will thus be seen that requeening is accomplished without dequeening.

Characteristics of a Honey Flow

Question.—How can one know when there is a good honey flow?—J. J. Loskat, Calif.

Answer.—When colonies are working well, the bees leave the hives quickly, usually flying up into the air some little distance, then spiraling a few times before flying off in a certain direction where nectar is plentiful. When the bees return to the hives, they fly directly for the hive entrances and usually alight on the entrance boards some little distance from the opening into the hive if there is an alighting board, as there should be, then walk in with their loads of nectar and pollen. Bees filled with nectar alight rather heavily and it is possible to tell from the appearance of the bees whether or not they are well loaded. Bees that are loaded have their abdomens distended somewhat while bees that have practically no nectar look much smaller and hover up and down in front of the hives before entering.

A Brief Review of Bee Losses in Utah

By J. Fleming Wakefield

The history of beekeeping in Utah started with the early pioneers of 1847. Since the beginning, at one time or another, a variety of agencies have contributed to minor losses all down through the years, e. g. unreasonable weather, bee diseases, plant poisoning, and faulty management. These disadvantages have been taken as a matter of course and careful interested beekeepers have made the business a success, in spite of these minor handicaps.

The first major losses immediately followed the opening of the smelters. These losses were so severe that many owners were put entirely out of business. It soon became apparent that no successful bee business could survive in the path of smelter fumes. Certain otherwise profitable bee pasture, therefore, became useless.

This condition continued in effect until very recent years, since the smelters have been required to trap out the arsenic from the smoke.

Another fertile cause of major losses was introduced when spraying the orchards with arsenic came into vogue. For a long time it was impossible to persuade the orchardists not to spray in the blossoms; but a law was finally passed prohibiting the application of poisonous spray until the petals fall. Since then they have been more careful.

But there still remains the danger of poison in the blossoms under the trees at various times during the summer. To overcome this obstacle, beekeepers learned to move the bees out of the orchards before the cover crop came into bloom.

Orchardists now generally realize that, because of the extravagant application of poisons, the insects that normally care for pollination have been destroyed. They know they must have the bees; and some are more careful to help protect them.

About the time the problem of fruit spray seemed likely to be solved, beekeepers were threatened with **another major loss,** this time in the form of grasshopper bait. As it was first introduced, it was provided with certain substances which were intended to attract the grasshoppers, such as banana oil. At two different meetings of the Utah Academy of Science, hearing reports on the distribution of the bait, the writer raised the objection that it would probably attract the bees; but a careful check on the apiaries located in the baited areas, revealed no evil effects from its use **during the summer months.**

In 1938, the bait was changed to its present form, and there occurred what was probably the heaviest bee loss in our history up to that date. These losses were thought by some to be due to smelter fumes; but no one was certain of the cause. It was said that "some strange malady" had overtaken the bees.

In October of that year, I accompanied Dr. W. H. Hendrick, State Veterinarian, and Dr. Shirley Nebeker, Field Veterinarian, to a cattle ranch, near Panguitch, where a number of fine animals had recently died, and others were then dying, presumably as a result of eating from a partly used sack of grasshopper bait which had been carelessly left out. Everyone concerned, including the two state officials, agreed that grasshopper bait had probably killed the animals.

My duties called me to an apiary nearby, where the bees had recently died mysteriously. I gathered a box full of dead bees off the ground in front of the hives and sent them to the government laboratory for analysis. The report came back that no evidence of bee disease was found, but since the bees had access to grasshopper bait, death might be due to the effects of that poison. A sample of the dead bees was to be tested for arsenic, but I never received a report. I am thoroughly convinced, however, that grasshopper bait killed these bees.

This was the first evidence that grasshopper bait had caused the terrific loss of bees in 1938. In the spring of 1939 I spent several days in Salt Lake County checking on some heavy losses, which were again blamed to smelter fumes.

In five apiaries near the airport west of the city, I failed to find a single bee alive. On the east side of the valley, 57% of the colonies in all the yards visited had died outright, and the remainder were reduced to nuclei struggling to keep

alive. Most of these were later reported dead.

The conditions in the southwest part of the valley were strikingly similar to those found on the other side. Each hive contained a handful of bees, in the back part of the second story, dead or alive, surrounded by plenty of stores, but too weak to break cluster and reach it. Some small clusters had died of sickness or starvation, immediately on the granulated honey, which they were unable to liquefy.

In every apiary all over the valley the supers were found to be full of honey which had been stored in the summer while the colony was yet strong; but the mild winter had allowed the bees to fly almost any day until February. By this time the sick bees had left the hives and only a handful of live ones remained; these, too, had nearly all died during the forty-two days after February 1, when it was too cold for them to fly.

Since these apiaries were generally located long distances from any orchards, they could not have been exposed to fruit spray. Some, however, were found immediately in the orchards; yet there was no apparent difference in the mortality of the bees located near the orchards and those remote.

Had they died from fruit spray, they would have disappeared too early in the season to fill the supers with honey. Spray is not applied late in the fall.

I learned from the county agricultural agent that 1100 persons had obtained grasshopper bait in 1938. This could easily have been spread late enough to entice the bees seeking moisture after all the sources of nectar were shut off. Fall rains, or heavy dew, would naturally supply this moisture! At this time the smelters were supposed to filter out the arsenic from the fumes.

The bait was passed out, free in any amount, to anyone who asked, and **no supervision** was provided. It is positively known that in many cases, the stuff was extravagantly used and carelessly thrown about.

Farm animals, domestic fouls, and game birds were destroyed. I personally picked up a sack of the bait that had been left at a city dump in Utah County, where hundreds of colonies of bees had died in apiaries near by.

The greatest loss of bees probably occurred in 1938 and no one surmised the cause. In 1939 another terrific loss was felt. Entire apiaries were wiped out in a few days. This happened at the exact time of a dearth of nectar, and immediately after grasshopper bait had been spread, and while it was still being distributed, lines of dead bees were traced to piles of the poison bait that had been carelessly thrown about.

In July of 1939 I made an investigation of the conditions in Utah County, and found them almost identical, or even worse, than were found in Salt Lake County. By this time 90% of the colonies had disappeared. The same was true in some parts of Wasatch and other counties.

Dead and dying bees were found scattered, or in piles all over the yards. I had samples of these analyzed by the state chemist, and the results were filed in our office. These analyses constitute the best evidence of the actual facts of bee poisoning in 1938 that can possibly be produced.

The results showed a difference of more than fourteen times as much arsenic in the bees that died in Salt Lake, Utah, and Wasatch Counties as was found in normal bees from outlying counties where no bait had been put out. The investigation of 1940, to which I contributed 37 samples for analyses, developed no outstanding difference in normal bees, or others from that revealed in my own inquiry of 1938, at the very time the bees were dead or dying. It is also true that, so far as I am able to read the reports sent to me, of the numerous other samples, they consistantly agree with mine.

Therefore, **my first conclusion is:** "Very significant amounts of arsenic trioxide were found" **in practically** all the samples taken from the heavily baited districts where the correspondingly heavy losses in bees occurred in 1939.

Samples of soil, water, and algae were taken from the proximity of an apiary at Lehi, where waste water from an extravagantly baited cornfield had ponded, and killed the bees that watered there. Analyses of these samples showed an exceptionally high content of arsenic.

My second conclusion, therefore, is that waste water from an extravagantly baited field will certainly kill the bees that water there. Every experienced beekeeper knows that

(continued on page 173)

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Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 8 cts. per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word Copy should be in by the 10th of the month preceding

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FANCY COMB and extracted clover honey, buckwheat, dark amber, goldenrod, in 60 lb. cans, 160 lb. barrels. Jas. H. Cartwright, 532 McClintock St., Pittsburgh, 14, Pa.

U. S. FANCY BUCKWHEAT HONEY, 24 pound jars $5.05, Labeled, $5.10, Orange, $5.70, Labeled $5.75. Shipping weight 36 pounds. Sample 15c. BIZZY BEE RANCH, No. Abington, Mass.

HONEY FOR SALE—50-60 lb. tin, California Eucalyptus Honey, $12.00 can; 50-60 lb. tin California Avacoda Honey, $12.00 can; 50-60 lb. tin, Amber Goldenrod, $10.80 can. Natural Foods Institute, 624 Prospect Ave., Cleveland, Ohio.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We cannot guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C. O. D. terms except where the buyer has thoroughly established his credit with the seller.

WE PAY CASH for extracted clover honey. Fair-Field Honey Company, Millersport, Ohio.

WANTED—White and amber honey; any amount. D. F. Treap, 317 Keenan Ave., Cuyahoga Falls, Ohio.

HONEY AND BEESWAX—Highest prices paid. Mail samples. Advise quantity. BRYANT AND COOKINHAM, LOS ANGELES, CALIF.

CEILING price paid for Michigan clover honey, in sixty-pound cans. TOWNSEND SALES COMPANY, E. D. Townsend, Northstar, Michigan.

HIGHEST cash return made the day we receive your beeswax. Write for shipping tags and quotations. Walter T. Kelley Co., Paducah, Kentucky.

WANTED—All grades of comb and extracted honey. Bee supplies and honey containers for sale. Prairie View Honey Co., 12243 12th St., Detroit, Mich.

HONEY WANTED—All Grades and Varieties. Highest Cash Prices Paid. Mail Samples. State Quantity. HAMILTON & COMPANY, 1360 Produce Street, Los Angeles, Calif.

HONEY AND WAX WANTED. All grades. Any quantity. Send samples and your best cash price. We carry large stock of Tin and Glass honey containers. ALEXANDER COMPANY, 819 Reynolds Rd., TOLEDO, OHIO.

WANTED—We pay cash top price for clover honey in 60-lb. tins. Any quantity. Send samples and best prices. Cloverdale Apiaries, F. M. Babcock, Fredonia, N. Y.

WANTED white or light amber extracted honey from 1000 lbs. to a carload. Cash waiting. Send samples and best price to Honeymoon Products Co., 39 E. Henry St., River Rouge, Mich.

CLOVER HONEY WANTED—Large or small lots. Would like to establish permanent connections with several good producers. Ellsworth A. Meineke, R. 1, Arlington Heights, Ill.

FOR SALE

FOR SALE—300 section supers, with equipment, 50c each. N. B. Querin, Bellevue, Ohio.

MY FAVORITE BEE VEIL. Write for description and price. G. M. Ranum, Mount Horeb, Wisconsin.

GOOD USED hand reversible 2-frame honey extractor for sale, $15.00. Lewis W. Lee, Frankfort, Route 4, Ky.

QUEENBEE PAINTING outfits $1.00, colony records 10/15c, postpaid. South Dick Apiaries, Waban, Massachusetts.

FOR SALE—4-frame "Standard" churn extractor, about 40 supers, 10 floors, 10 covers. C. E. Warner, Oakwood, Ohio.

FOR SALE—Lewis 8-frame honey extractor and other used and new bee hive equipment. Tom Baldwin, Cecil, Ohio.

YOUR WAX worked into high quality medium brood foundation for 16c a lb.; 100 lbs. $12.00. Fred Peterson, Alden, Iowa.

MOLASSES PURE COUNTRY SORGHUM, $1.00 in 5-lb. pails, F. O. B. Montezuma. HOMER NOBLITT, MONTEZUMA, INDIANA.

COMB FOUNDATION at money-saving prices. Wax worked at lowest rates. Comb and cappings rendered. Robinson's Wax Works, Mayville, N. Y.

MAKE YOUR OWN BODIES cheap, for Jumbo frames, or standard 8 frame. Details 50c. Satisfaction or money back. John Wharton, Greenville, Texas.

MOLASSES, pure New Orleans, Alabama Sugar Cane, $1.00, in 5 lb. pail. 15c packing charges; 10-lb. pecans, $3.25 f. o. b. Louisville, Ky. Lose Bros, 206 E. Jefferson.

FOR SALE—Senior Brand capping melter about 200 assorted telescope covers, 100 bottom boards, 350 Boardman feeders without jar covers. Robert E. Denny, Roseau, Minn.

WRITE FOR CATALOG. Quality bee supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Michigan.

FOR SALE—Used beekeeping supplies, including honey tank, extracting foundation, excluders, inner covers, supers with wired sheets. Also hive bodies, etc. Earl Heiges, Shiremanstown, Pa.

SAVE MONEY by letting us work your wax into wired regular comb foundation. Large catalog describes everything. You pay only wholesale factory prices as we have no agents. Walter T. Kelley Co., Paducah, Kentucky.

LEWIS-DADANT BEE SUPPLIES IN MINNEAPOLIS—Prompt shipment from complete stock. Send list of supplies for quotation. We carry carloads of honey containers in stock. Honey and beeswax accepted in trade or will pay cash. Honey Sales Company, 1806-08 N. Washington Ave., Minneapolis, Minn.

FOR SALE—Queen excluders, clean, good condition 33 8-frame Standard Unbound Zinc, $15.00; 19 10-frame Standard Unbound Zinc, $10.00; 18 10-frame Standard 3 wire wood, $10.00; 14 10-frame Standard 7 wire wood, $8.00. Spring Valley Apiaries, Montezuma, Indiana.

BEES AND QUEENS FOR SALE

BRIGHT ITALIAN QUEENS, $1.00 each. Ready in April. D. W. Howell, Shellman, Georgia.

Get your "CAUCASIAN" Queens from us. Crom's Caucasian Apiaries, P. O. Box 24, Manteca, Cal.

FOR SALE—Package bees, queens, and 3-frame nuclei. Write for 1944 prices. Walker Apiaries, Lexington, Texas.

HOLLOPETER hustling Italian queens ready May 20, $1.00 each. No package bees. White Pine Bee Farms, Rockton, Pa.

PACKAGE BEES AND QUEENS, Italians. Limited amount for sale. Place your order early if you want them. W. A. Fletcher, Garland, Texas.

CAUCASIAN bees and queens. Booking for shipment after May 10th. 2-lb. pkg. $3.50; 3-lb. pkg., $4.50. Lewis & Tillery Bee Co., Greenville, Ala.

ITALIAN QUEENS, June first to fifteenth 80c each, $9.00 per dozen. After June fifteenth $7.00 per dozen. Walter D. Leverette Apiaries, P. O. Box 882, Fort Pierce, Fla.

THREE-BANDED ITALIAN queens, finest quality, extra good workers, 1-25, $1.25 ea.; 25-100, $1.15; 100 up, $1.05. Booking orders now for spring delivery. Alamance Bee Co., Geo. Elmo Curtis, Mgr., Graham, N. C.

GOLDEN ITALIAN QUEENS, finest quality, 1 to 25, $1.25; 25 to 100, $1.15; 100 up, $1.05 each. Satisfaction guaranteed. Carolina Bee Farm, W. O. Curtis, Mgr., Graham, N. C.

PACKAGE BEES AND QUEENS. Booked up for early shipping. Now supplying old customers. New customers solicited in peace times. Crenshaw County Apiaries, Rutledge, Ala.

EARLY PACKAGE BEES. Prompt shipment, begins May 1, weather permitting. Two-pound package and queen, $4.00 postpaid. 3-lb. pkg. and queen, $5.50 postpaid. Choice Italian queen, $1.00. Safe arrival guaranteed. Birdie M. Hartle, Reynoldsville, Pa.

HELP WANTED

Experienced beekeeper, single or married, also helper. Barrett Apiaries, Howell, Mich.

HONEY WANTED
Carloads and less, all grades.
Will pay top prices.
Would contract now for crop.
Also Beeswax.
H. & S. HONEY & WAX COMPANY, Inc.
265 Greenwich Street, New York, N. Y.

HONEY WANTED
Carloads and less. All grades. Pay cash. Can furnish containers.
J. W. REITZ & BROS.,
Summerfield, Florida

WANTED--Extracted Honey All Varieties
Send samples and delivered prices to
JEWETT & SHERMAN COMPANY
Cleveland, Kansas City and Brooklyn

HONEY WANTED
Carloads and less than carloads. Mail sample and best prices in all grades.
C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

No Package Bees
Can accept no further orders for the season
We thank you.
THE PUETT COMPANY
Hahira, Ga.

To Our Customers
We are booked up on package bees until June 1st. To those who have ordered package bees with queen, will quote.

QUAN.	QUEENS	PKG. 2-lb	PKG. 3-lb.	PKG. 4-lb.
1 to 49	$1.10	$3.45	$4.45	$5.45
50 and up	1.00	3.25	4.25	5.25

For queenless packages deduct price of queen. Young queen, safe arrival.
HOMAN BROS.
Shannon, Miss., R. R. 2

Can Not Accept More Orders

—FOR—

April and May Delivery at Present

To customers who booked their orders before this season's prices were agreed upon, will quote as follows:

Italians or Daughters of Queens bred for resistance

Package Bees with Queens

Lots of	2-lb.	3-lb.	4-lb.	5-lb	Queens
1 to 24	$3.50	$4.50	$5.50	$6.50	$1.10
25 to 99	3.35	4.35	5.35	6.35	1.05
100 up	3.20	4.20	5.20	6.20	1.00

A. E. SHAW

Shannon, Miss.

Italian Bees and Queens

We can still handle a few more orders. Ten per cent books any order. Entire satisfaction is guaranteed.

2-lb. pkgs., 1 to 24, $4.00 each. Unt. Italian queens, 1 to 24, $1.25 each.

Valley Bee & Honey Co.

Weslaco, Texas

NORMAN'S

Bright Italian Bees and Queens

For 23 years we have been breeding the Italian stock. We guarantee pure mating of Queens, safe arrival on Queens and package bees. Health certificate furnished.

All package bees F. O. B. Express

2-lb. package bees with Queen	$4.00
3-lb. package bees with Queen	5.00
4-lb. package bees with Queen	6.25
Young laying Queens (each)	1.25

NORMAN BEE CO.
Ramer, Ala.

BUY U. S. WAR BONDS AND STAMPS

HELP WANTED

HELP WANTED—To work bees. Exceptional opportunity for good help. M. E. Ballard, Roxbury, N. Y.

WANTED—Men for production of honey. Apiaries in northern Minnesota and Louisiana. State age, experience and wages expected. HOPKINS HONEY FARMS, MARINGOUIN, LOUISIANA.

WANTED—FIELD MAN to solicit and assemble honey from beekeepers for large national honey packer. Liberal salary and commission. State age, experience and salary. Box No. 1000, Gleanings, Medina, Ohio.

WANTED—Several young men, desiring to learn beekeeping, as helpers, in our over-3000-colony outfit. Write stating age and experience and wages wanted. Deferment possible. Board and room furnished. Chance for war factory jobs nearby during off season. Oscar H. Schmidt & Sons, Rt. 4, Bay City, Mich.

HELP WANTED—Experienced bee man. Also men with less experience. To work in either northern or southern apiaries or both. Give complete personal information, wages expected, when ready to start, in first letter. M. C. Tanquary, 2181 Doswell Avenue, St. Paul 8, Minnesota.

MISCELLANEOUS

WANTED—Ten to 500 swarms, standard 10-frame preferred. Must be in Michigan. Cash. Graydon Collar, Cedar Lake, Mich.

WANTED—About 200 colonies in two-story 10-frame hives, with equipment for extracted honey. Hives must be modern factory-built. Harold E. Cheffer, 163 & Central Park Ave., Harvey, Ills.

WANTED—Honey pump. Merl Harrington, R.D. 2, Benton, Penn.

POSITION WANTED

POSITION WANTED—War veteran experienced in bee work, swarm control, queen rearing, etc. Go anywhere in United States, on shares or salary. Reference exchanged. F. W. Hammer, Georgetown, Ind.

MAGAZINES

THE INDIAN BEE JOURNAL—The only bee journal in India. Sample copy free. Yearly, 7s. 6d., International Money Order. Apply Editor, Indian Bee Journal, Jeolikote, Dist. Nainital, U. P. India.

INTERESTED in Angora Goats? Read the Sheep and Goat Raiser, Hotel Cactus, San Angelo, Texas, the only ranch magazine published serving the Angora Goat industry. Subscription $1.50. Sample copy fifteen cents.

WESTERN CANADA BEEKEEPER, official organ of the Manitoba Beekeepers' Association, one year, $1.00; in combination with one year's subscription to Gleanings in Bee Culture, $1.60. Wallingford Building, Winnipeg, Canada.

THE BEE WORLD—The leading Journal in Great Britian and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy post free, 12 cents stamps. Membership in the Club, including a subscription to the paper, 10/6. The Apis Club, L. Illingsworth, The Way's End, Foxton, Royston, Herts, England.

READ the South African Bee Journal to be conversant with conditions from far afield. Subscription 5/ per year. For further particulars, write to the Hon. Treasurer, P. O. Box 43, Cleveland, Johannesburg, S. Africa.

MANY BEEKEEPERS have proven raising fox, mink, nutria, muskrats, rabbits, highly profitable. Send dime for sample copy. Canada's oldest fur farming magazine telling how. Fur Trade Journal of Canada, Box 31, Toronto 2, Ontario.

MAGAZINES—Business, Vocational, Diversion. Current single copies only. Choose from 573 different publications, covering advertising, confectionery, electrical, foods, health, horticulture, jewelry, mail order, music, photography, poultry, refrigeration, insurance, vegetable growing, watchmaking, and more than 150 other fields. List with prices free. Commercial Engraving Publishing Company, 34M North Ritter, Indianapolis 1, Indiana.

WANTED TO BUY

WANTED TO BUY colonies of bees. State price. Thomas Mc Dermott, 123 North 11th St., Newark 7, N. J.

WANTED to buy or swap, 32-volt direct drive wind charger, vacuum cleaner, and other 32-volt equipment. Ray McCaffrey, Kalamazoo, R. 3, Mich.

ONE 1 inch Root honey pump with reduction gear. Also fittings if available. Honey Lee Apiaries, Godfrey, Ill.

WANTED

MIGHT SELL or take partner in small bee ranch. Chas. Watts, Coquille, Oregon.

BABY CHICKS

ATTENTION-READ-THINK. Do you want to be an outstanding poultryman? Do you want to produce broilers that buyers will beg for? Do you want chicks that live, grow, and lay plenty of large eggs? Remember, dead chicks can earn no profits. You need egg bred pullets to produce those profit eggs, extra eggs over those needed to pay feed costs. TO BROILER GROWERS we recommend White Wyandotte-White Rock cross chicks. They are chunky, have no dark pin feathers and are in demand by poultry buyers at weights from 2 to 6 lbs. Also White Rocks that grow tail feathers within 10 days. Rock-Reds that grow fast as weeds. TO EGG PRODUCERS we can't recommend too strongly, Ohio Progressive Reds, Buckeye Red-Rocks or Barr Rocks. They simply are laying fools. Will outlay the average Leghorn flock by far. (We also hatch Leghorns.) Write us, we'll send you a folder and if you wish information on any special breed, I'll personally write you. All Amstutz flocks are Pullorum tested until no reactors found and 100% R.O.P. Male Mated.

ORDER FROM THESE LOW PRICES White & Barr Rocks, R. I. Reds, New Hampshires, Rock-Red Cross, Red-Rock Cross, White Wyandotte-White Rock Cross, Ohio Progressive Reds. Super Mating, 200-224 Egg Pedigree Sired, $14.50, 100, Deluxe Mating, 225-300 Egg Pedigree Sired, $17.00 per 100. S. C. White Leghorns, 260-300 Egg Pedigree Sired, Pullet Mating, $13.50, 100, old hen mating, $16.50, 100. Deluxe Mating, 300-334 Egg Pedigree Sired, old hen mating, $18.00, 100. COCKERELS: Heavy Reds, $8.50, 100. Leghorns, $2.45, 100. Postage prepaid. AMSTUTZ HATCHERIES, Orrville, Ohio, Box 65.

Norman's Bees and Queens

—OF QUALITY—

For the best results and not excuses place your order with me and be sure of getting better-bred 3-band Italians of quality. I guarantee purely mated queens, full weight packages, safe arrival and satisfaction.

Packages F. O. B. Express
State Health Certificate Furnished

Untested Queen	$1.25
Tested Queen	2.50
2 lb. Pkg. with untested queen	4.00
3 lb. Pkg. with untested queen	5.00

JOHN A. NORMAN

Rt. 2. Ramer, Ala.

CARNIOLANS CAUCASIANS

We cannot accept any further orders for package bees at this time. Queens of both races June 1st on. Price: Untested, $1.00 each. By Airmail to distant points, 7c extra each.

Albert G. Hann, Glen Gardner, N. J.

1944 PRICES FOR ITALIANS PKGS. BEES AND QUEENS

LOTS OF QUEENS	2-LB.	3-LB.	4-LB.
1 - 24	$1.10	$3.50	$4.50	$5.50
25 - 99	1.05	3.35	4.35	5.35
100 up	1.00	3.20	4.20	5.20

FARRIS HOMAN
Shannon, Miss.

3-BANDED ITALIAN BEES

2-lb. pkg. with queen	$3.50
3-lb. pkg. with queen	4.50
Queens	1.10

No discount

Filled out for the month of April, but I am booking orders for May.

J. P. Corona, Box 124, Kenner, La.

Australian Beekeeping News
The Leading Bee Journal of the Southern Hemisphere is the

"Australasian Beekeeper"

Subscription 5 shillings per year. Start any time. Inquire for International Money Order for 5 shillings (Australian) at your Post Office.
Write now to the Editor. P. O. Box 20.
West Maitland New South Wales
Australia

PETTIT'S PACKAGE BEES

All Sold for 44.

Regret that we cannot accept more orders for 1944 than we have already booked.

Will try to have even more bees in 1945.

Morley Pettit

Tifton, Georgia, U. S. A.

NOTICE, PLEASE

We are booked to capacity for 1944. Save yourself delay and us extra work by not sending orders. To those for whom we have orders booked, many thanks; to others, our sincere regrets.

ROSSMAN & LONG

P. O. Box 133 Moultrie, Ga.

BEES - ITALIANS - QUEENS

We can book a few more small orders at the following prices:

2-lbs. bees with queen	$4.00 f.o.b.
3-lbs. bees with queen	5.00 f.o.b.
Queens	$1.25 ppd.

W. E. Plant

Rt 2, Hattiesburg, Miss.

MOUNTAIN GRAY BEES

No more orders for bees or queens accepted until further notice appears in Gleanings. Thanks to all our friends and customers.

BOLLING BEE CO.
Bolling, Ala.

SEEDS

SWEET ANISE to flavor honey, seed fifty feet. Blossoms till fall by pruning. Also catch the first fat rat and the last, no bait, wooden trap. $1.00. H. Richter, 401 No. K St., Tacoma 3, Wash.

FOR SALE—4 Am. Basswood Seedlings, or 6 Russian Olive Seedlings, or 5 Marrowii Honeysuckle, or 4 Pink Honeysuckle shrubs, 18 inch, or 3 Red Dogwood shrubs, 2 foot, or 3 Pussy Willow, 2 foot, or 3 Basswood transplants, 3 foot, postpaid for a dollar bill, checks add 10c. Nectar and Pollen producers. For larger size trees, write us. Lewis Dadant dealer. Our COMBINED CONTROLABLE FEEDER and SWARM CONTROL BOARD will save swarms. Sample, $1.75 postpaid, 10 for $16.00, not prepaid. NICOLLET COUNTY NURSERY, St. Peter, Minn.

CHOICE ITALIAN QUEENS and package bees.

We have been furnishing queens and package bees through other shippers. Let us furnish yours direct. Write for prices.

CLIFTON APIARIES

P. O. Box 684, Oroville, Calif.

THE BEEKEEPERS MAGAZINE

$1.00 A YEAR

Established 1938, it is now one of the three leading beekeeping publications. Single copy current issue, 10c. Combined with Gleanings in Bee Culture it makes a splendid combination. Both magazines, one year, $1.75.

THE BEEKEEPERS MAGAZINE
3110 Piper Rd., Rt. 5, Lansing, Mich.

BEEKEEPERS ITEM

Serving the beekeeping industry for a quarter century without bias or prejudice. "The forum for the thoughtful." One year $1.00; two years, $1.50; sample copy, 3c stamp.

With Gleanings it provides a combination that covers the beekeeping field.

Both magazines for one year, $1.75

BEEKEEPERS ITEM

P. O. Box 687 San Antonio, Texas

BUY U. S. WAR BONDS AND STAMPS

.....**NOTICE**.....

The labor situation will govern our spring activities. We are unable to commit ourselves in advance under the circumstances. We will be glad to advise you on request during April and May as to the possibility of accepting more small orders.

BESSONET BEE CO., DONALDSONVILLE, LA.

QUALITY PACKAGE BEES AND QUEENS

We have discontinued booking orders until further notice in the bee journals.

Prices for 1944:

	2 lb. with Queen	3 lb. with Queen	Single Queens
1 to 10	$3.45	$4.45	$1.05
11 to 24	3.35	4.35	1.00
25 to 100	3.30	4.30	.95
100 and up	3.20	4.20	.90

GARON BEE CO., DONALDSONVILLE, LA.

Telephone 8614 Telegrams, Western Union

ITALIAN QUEENS

We have a limited quantity of queens open for booking in April and May. Sorry—no packages.

QUEENS POSTPAID

1-25 $1.00 25-up $.90

Send 10% with order, balance 10 days before shipping. Prompt reply. All orders acknowledged. We are booking orders for Queens after June 1st delivery. Order early.

Rt. 2, Box 9 SUNKIST BEE CO. Houma, La.

First Quality Italian Package Bees and Queens

	(1)	(10)	(50)	(100 and over)
2 lbs. with queen,	$4.25	$4.00	$3.60	$3.40
3 lbs. with queen,	5.25	5.00	4.50	4.25

Extra queens, $1.25 each.

Terms: 10% down to book your order, balance 10 days before shipment. Payable in U. S. Funds.

Book your order early and avoid disappointment.

ALBERT KOEHNEN, Live Oak, Calif.

One Year's Subscription FREE

Hundreds of new beekeepers have started this year. Their success is important. **"Talks to Beekeepers"** in Gleanings in Bee Culture will help them.

Mail Us:

3 One-year Subscriptions

or

2 Two-year Subscriptions

(At the Regular Rates)

And we will enter your subscription FREE for one year.

Mail to Circulation Manager

GLEANINGS IN BEE CULTURE

Medina, Ohio

Sold Out

• • •

Regret that no additional orders for package bees or queens can be accepted until further notice. Thanks.

• • •

York Bee Company

JESUP, GEORGIA. U. S. A.

(The Universal Apiaries)

THE CANADIAN BEEKEEPING COUNCIL

(Continued from page 139)

industrial use of honey be permitted, especially for the baking industry; that the beekeeping industry be assured of ample supplies of wax to meet the increasing demand for foundation; and that sufficient tin plate be released for the manufacture of feeder pail replacements.

Representations are also being made to the War Prices Stabilization Board for a subsidy on package bees to offset the uncontrollable price of these, in relation to fixed honey prices, or as an alternative, the removal of the 10 percent war tax on packages.

The foregoing are a few of the ways in which the Council has been able to bring influence to bear on behalf of the beekeepers, and it is hoped that our National Organization will be able to play an even more useful part in unsettled conditions that are almost certain to prevail following the liquidation of Hitler, Tojo, and Company.

Peterboro, Ontario.

75th Anniversary Catalog

WILL BE IN THE MAIL SOON

Our 1943 prices are in effect with only a few exceptions. See your local Root Dealer.

5	Standard hives with frames	$17.50
5	Standard hive bodies, empty	4.40
100	Standard frames	6.05
50	Sheets 3-ply foundation	6.45

The A. I. Root Company

MEDINA, OHIO

The A. I. Root Co. of Iowa.
COUNCIL BLUFFS, IA.

A. I. Root Co. of Chicago.
224 W. Huron St.
CHICAGO 10, ILL.

Root Quality

A. I. Root Co. of Indianapolis.
121 N. Alabama St.
INDIANAPOLIS 4, IND.

A. I. Root Co. of Syracuse.
1112 Erie Blvd., East
SYRACUSE 3, N. Y.

The A. I. Root Co., 12 W. 21st St., New York 10, N. Y.

This photo shows portion of our queen bee yard containing over 6000 nuclei.

30,000 Italian Queens

Our 1944 Production Capacity	Packages in Proportion	May we serve you
		3 lb. with qns. $5.00
		2 lb. with qns. 4.00
		Extra qns. 1.25

By Express

OVERBEY APIARIES, BUNKIE, LA.,

A BRIEF REVIEW OF BEE LOSSES IN UTAH

(continued from page 165)

bees are not attracted by any kind of bait, during a honey flow, but during a dearth of nectar, as was experienced in June of 1939, and in the fall of that or any other year, they will work feverishly on anything suggestive of honey or pollen.

My third conclusion is that in the absence of something more attractive, grasshopper bait, as it was handled in 1939, during a dearth of nectar, was attractive to honeybees and killed them off by thousands in some sections of the state.

According to a recent report made by Dr. G. F. Knowlton, who has charge of the distribution of the bait, as well as of the current Bee Loss Investigation, very much more grasshopper bait was used in 1938 and 1939 than at any time before or since. This, together with the common sense recently exercised by the farmer, probably account for the fewer losses recently reported from that source.

Various other crops than orchards are being treated more and more with arsenical drugs. Even the alfalfa fields are treated with arsenic, as well as strawberries, tomatoes, etc. It also seems evident that the smelters are becoming more careless than they have been in recent years, failing to filter out the arsenic from the smoke.

It was reported at the beekeepers meeting on January 27, that several large apiaries have recently been completely wiped out. One man lost every colony in his yard of 285. Another, a county inspector, lost every colony he owned, viz., 565 colonies. His report seemed to indicate that in a recent visit around the county, he failed to find a single bee alive.

This inspector proposed a resolution urging the state authorities to do something drastic to stop the reckless, and quite unnecessary use of arsenical dusts and sprays and baits.

President Wilford Belliston of the Utah Honey Producers Corp., said at a meeting of the Farm Bureau that, "Unless corrective measures are taken, fruit growers shortly will find the state denuded of bees, the chief pollenizing agent."

In summarizing my conclusions, I feel sure the beekeepers unanimously agree that a great amount of unnecessary poison is being used. The land is becoming saturated with arsenic, and something should be done to prevent it. Let there be some system of **supervision** established.

Provo, Utah.

Root QUALITY
BEE SUPPLIES

For Michigan

NOW is the time to anticipate your needs for 1944. Send us a list of your wants and we will quote best CASH PRICE.

HAVE A BIG STOCK OF FRAMES, FRAME WIRE, FOUNDATION, GLASS CONTAINERS AND 60 LB. CANS.

SECTION HONEY FOR 1944
"It's a snap" to prepare the Supers with the ROOT'S SPLIT SECTION DEVICE (price 55c), using regular sections split 3-sides and thin super for split sections.

M. J. Beck Co.

Sucessor to M. H. Hunt & Son

510 N. Cedar St., Box 7

LANSING 1, MICH.

Beeswax Wanted
Cash or Trade

41½ cents cash or 43½cents trade

BUY U. S. WAR BONDS AND STAMPS

APRIL

Bees are in good shape and are building up nicely. We can handle a few orders the first week in April if the weather continues good, especially queenless packages. We are booked solid from April 10th on.

- Prices -

Lots of:	Qns.	2 Lb.	3 Lb.	4 Lb.	5 Lb.
1 - 24	$1.10	$3.50	$4.50	$5.50	$6.50
25-99	1.05	3.35	4.35	5.35	6.35
100-499	1.00	3.20	4.20	5.20	6.20

Queenless Packages - Deduct Price of Queen

• • •

The Stover Apiaries

Mayhew, Miss.

SIXTY YEARS WITH BEES AND FRUIT

(Continued from page 131)

With the clover being plowed up and soybeans being planted instead of sweet clover we must give more thought to bee pasturage.

It is generally conceded that it does not pay to plant for honey alone, but a farmer beekeeper could surely have a honey-plant garden, produce honey for some 3 months, from early summer until nearly frost and from that garden, seed could be gathered for planting in all the waste land near by and along the highways where it would be much better than a lot of weeds. The plants I have recommended are perennials and once started they last indefinitely.

No vocation has so much pleasure connected with it as beekeeping. I love to listen to that sweetest of all earthly music—the happy humming of the bees. It is almost an anthem sung by an angel choir. We should thank God that we are Americans and that we can live in America.

Verona, Mo.

BUY U. S. WAR BONDS AND STAMPS

Yes, Hen's Teeth, We Have Them

They give your DOLLARS more cents

4-fr. Extractors 9⅝" baskets	each	$14.75
10-fr. Wood Bound, Wire Queen Excluders, 5 or more	each	.80
10-fr. Telescope Cover Hives (Composition covering) with inner covers, frames, etc. Lots of 5		14.75
10-fr. Hive Bodies and Frames, lots of 5		6.65
Hoffman Brood Frames, per 100		5.05
25 lb. Hercules Wired Brood 8x16¾ or 8½x16¾		18.50
25-lb. Hercules Plain Brood 8x16¾ or 8½x16¾		17.50
25-lb. Thin Surplus Foundation 3⅞x16		19.75
Bee Escapes	each	.12
2" Hive Staples, per lb.		.30

(prices subject to change)

SEND FOR COMPLETE PRICE LIST FOR 1944

THE FRED W. MUTH COMPANY

Pearl & Walnut Sts. **Cincinnati, 2, Ohio**

PEPPING UP MEALS

Continued from page 133)

dry mustard, 2 egg yolks, slightly beaten, ¾ cup milk, ¼ cup mild vinegar, and 1 tablespoon butter.

Mix dry ingredients; add egg yolks, honey, and milk; cook in double boiler until thick stirring constantly. Add vinegar and butter. Cool. Makes 1½ cups.

For fruit juice dressing, substitute ½ cup tart fruit juice for the milk and ¼ cup orange or lemon juice for the vinegar.

Honey Corn Pudding

Two cups cooked, or canned whole-grain corn, 2 eggs slightly beaten, 3 tablespoons honey, 2 tablespoons melted butter, 2 cups scalded milk, ½ teaspoon salt, and ¼ teaspoon pepper.

Combine all ingredients and pour into a greased casserole. Bake in pan of warm water in moderate oven, 325 degrees F., for 1 hour or until firm. Variation: Add ½ cup minced cooked ham or grated cheese to pudding mixture before baking.

Honey Fig Whip

One and ½ teaspoons unflavored gelatin (Knox) 2 tablespoons water, 3 egg whites, 1 teaspoon grated lemon rind, 2 tablespoons lemon juice, ⅛ teaspoon salt, ⅓ cup honey, and ½ cup chopped cooked dried figs.

Add gelatin to cold water and let stand to soften. Combine egg whites, lemon rind and juice, salt, and honey in top of double-boiler and beat with rotary or electric beater until mixture will hold its shape when beater is lifted. This will require about 5 minutes. Remove from heat. Melt gelatin over hot water, fold into egg white mixture; fold in chopped figs. Heap in dessert glasses and chill. Serve with chilled custard sauce, made of the 3 egg yolks, 2 tablespoons honey, and 1½ cups scalded milk, cooked in double-boiler until custard coats metal spoon. Flavor with vanilla if desired. Serve cold.

Honey Fig Filling

One and ½ cups dried figs, 1 cup cold water, ⅓ cup honey, 1 teaspoon lemon rind, 2 tablespoons flour, few grains salt, 1 tablespoon lemon juice, and ½ cup chopped nutmeats.

Cover figs with boiling water and let stand 10 minutes; drain, clip off stems and cut into fine pieces, using scissors. Add cold water and cook until tender, about 10 minutes. Add lemon rind. Combine honey, lemon rind, flour, and salt, add all at once and cook, stirring until thickened and clear. Remove from heat, add lemon juice and nut meats and cool before using.

Aurora, Nebr.

Package Bees and Queens

Leather Colored Italians Bred for Production

Prices of Package Bees with Queens			
Lots of	2-lb.	3-lb.	Ex. Queens
1 to 24	$4.00	$5.00	$1.25
25 to 99	3.85	4.80	1.10
100 or more	3.75	4.70	1.10

Terms: 25% deposit to book order, balance ten days before shipping date. We replace any bees that die in transit if it is our fault, if it is the carriers fault, file claim with them. We are now shipping.

The Island Apiary
Collier City, Fla.

1944-Package Bees and Queens-1944

BOOKED TO CAPACITY AT PRESENT

We Thank You

If we have a very favorable spring we can fill a few small orders. Let us book your order for June and July delivery.

NORMAN BROS. APIARIES
Ramer, Ala.

BUY U. S. WAR BONDS AND STAMPS

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OUR COVER PAGE

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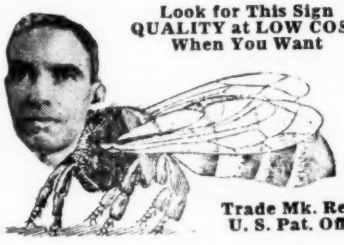

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25 to 99	3.80	4.80	1.15	the price of
100 or more	3.70	4.70	1.10	untested

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Over 25 year's experience shipping. Paying 43½ cents a pound for Beeswax in exchange for bees and queens. If you have over 50 pounds, write for shipping instructions. We replace any bees that die in transit if it is our fault; if it is the carrier's fault file claim with them.

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And, without this big national market when things return to normal, the Beekeeper . . . and the entire honey industry . . . face disaster.

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Pretty soon, if this keeps up, people will forget honey, stop asking for it now and when the present national shortage is past.

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The Monthly Honey Market

U. S. GOVERNMENT REPORT
Information from Producing Areas
(Prices generally refer to sales at wholesale by beekeepers f. o. b. shipping points except as otherwise noted. Dates shown for each section indicate approximate period covered.)

California Points: (Period Feb. 22 - Mar. 7)

Southern California. Cloudy, rainy weather with temperatures normal or slightly below normal prevailed during most of this period. Bees had very few flights but when they could fly obtained considerable pollen and a little nectar from eucalyptus, mustard, filaree, and various other shrubs and early annuals. Many beekeepers have been feeding and unless an early flow of fair proportion begins soon considerable additional feeding will be necessary. In general colony strength and broodrearing are very satisfactory, with some colonies building up somewhat in advance of the major flows. Because of the cool, wet weather the orange flow is expected to be from one to two weeks late. The growth of sage has been unusually slow for this season. Moisture conditions are ideal and with warmer weather plants should develop both rapidly and plentifully. Honey supplies were still light, with the demand good at the ceiling of $14.40 per case of 120 pounds, f. o. b. country points. Deliveries consisted mostly of small lots. Moderate supplies of beeswax met with a good demand at the ceiling of 41½ cents per lb. cash and 43½ cents per lb. in trade, f. o. b. country points.

Northern and Central California. Moderate to heavy rainfall fell over most of this area during the early part of the period, while mild, clear weather prevailed during the latter part. Moisture conditions are quite favorable in nearly all areas, although in some local sections there is still a seasonal moisture deficiency. Colonies are in good condition and broodrearing is quite active. Many colonies are developing considerably ahead of the main flow so that feeding has been necessary. In northern California bees are now working almond, plum, apricot, and numerous early shrubs and ground flowers. Many bees in the northern California area have been rented for pollination use by almond, cherry, and prune growers. Many orders for package bees for delivery in April are being turned down because of the lack of skilled labor. Current offerings of honey by beekeepers are extremely light, but most bottlers feel their present supplies may be sufficient to cover demand until the new crop is available. Sales f. o. b. shipping point - Central California Alfalfa, Bean, Blue Curls, Cotton, and Mixed Flowers, and Northern California Star Thistle and Thistle Mixture 12 cents per lb. Demand for beeswax was good at the ceiling of 41½ cents per lb. cash, f. o. b. to beekeepers.

Pacific Northwest: (Period Feb. 22-Mar.7)

West of Cascades. West of the Cascades the lowest temperatures of the season were registered during the second week in March. Heavy frosts occurred most mornings, but a few mild days permitted bees to make short flights and gather pollen from filberts, pussywillow and wild hazel. Dandelions are just beginning to bloom in the Willamette Valley. In southwestern Oregon temperatures ranged fairly low with snowfall in the foothills. Moisture conditions over all of western Oregon and Washington continued below normal. Bees are in generally good condition, with most hives showing small patches of brood. Some beekeepers have found feeding necessary In some yards losses as high as five to ten percent were reported, largely as a result of queenlessness, although losses as a whole have been light.

East of the Cascades. Night temperatures were low with heavy frosts and some wind. Rainfall was moderate but snowfall in the mountains was heavier. Bees have been able to make short flights but as yet there has been nothing for them to work on. Maple and willow are about ready to bloom. Winter losses have been extremely light, although dwindling may be expected in some queenless colonies and considerable feeding appears to be necessary in many yards. Broodrearing is just getting under way. Supplies of honey in beekeepers' hands were very light over the entire Pacific Northwest and no sales were reported.

Intermountain Region: (Period February 23 -March 8)

Moisture conditions were greatly improved in this area during late February and early March except for the plains and eastern mountain area of Colorado and a large portion of Montana. The Western Slope of Colorado and Utah received extremely heavy snowfalls which should provide ample irrigation water. For the area as a whole bees are wintering fairly well and most colonies have fair quantities of stores. Reports continue to come in from Utah of heavy losses, apparently from poisoning. Demand for honey has fallen off but supplies in beekeepers' hands seem to be fairly well cleaned up. An influx of greater quantities of various cane sirups has reduced the retail demand for honey and many retail stores and wholesalers are well stocked with honey. This can be partly accounted for by increased quantities of honey being held last fall for local consumption. Sales f. o. b. shipping point, per lb.-Clover-Alfalfa in case to ton lots mostly 12 cents, with an occasional sale as high as 13-14 cents; in single 60s to consumers 14-15 cents, mostly 15 cents; in small pails 18-19 cents in glass jars 22-24 cents. Beeswax, 41½ cents per lb. cash, and 43 1/2 cents in trade, f. o. b. to beekeepers.

Colorado. Heavy snows and some rain have greatly improved moisture conditions on the Western Slope. In fact in some areas the snow cover at this time is heavier than a year ago. In the extreme eastern portions of the Rockies and over the plains area of Colorado, the snowcover is still considerably below normal, in some sections running only 50 percent of that of a year ago. In the plains area the sub-soil is still dry. Over the State as a whole bees have wintered fairly well, although on the Western Slope some beekeepers are reporting smaller than normal clusters and feeding has been necessary in nearly all areas. Winter losses have been slight.

SUMMARY

Colder weather prevailed over the entire northern section of the country, with some sections reporting the lowest temperatures of the winter. In the northern States moisture conditions were improved by additional snow and rainfall, although portions of the Plains Area and North Central States still need considerable moisture. In the South moisture conditions have also

been favorable, although portions of the Gulf Coast States, with the exception of Florida, have had too much rain for best plant growth and early spring farm operations. Most of Florida is still somewhat deficient in moisture, but rains during this period improved conditions somewhat. In the Gulf Coast States early sources of honey are yielding, brood rearing has been active, and many colonies are approaching the swarming stage. It is expected that the first honey will be extracted in Florida and south Georgia before the end of March. The orange flow is just beginning in Florida, but in California this flow promises to be at least two weeks later than normal because of the heavy rains and cool weather.

Present indications point to better than average wintering of bees in practically all sections of the country. In some of the northern States some colonies are short of stores and will require considerable feeding before the early spring flows. Over most of this area consumption of stores has been unusually heavy because of the mild winter. Plant conditions are generally favorable where precipitation has been ample to provide for a normal spring growth. Portions of the North Central and Plains States had little or no snow cover during much of the winter so that clovers may have suffered somewhat. Regardless of damage the acreage of sweetclover is expected to be considerably lighter than in recent years. Large acreages are being plowed under to provide additional acreage of soybeans and other cash crops. In some areas clover weevil infestation on sweetclover has become increasingly serious. In some sections white clover appears to be more plentiful and may partially make up for the deficiency of sweetclover, although it is not as heavy a yielder.

Plans for expansion among beekeepers are still indefinite. Many amateur beekeepers are beginning operations, but on the other hand many of the larger commercial beekeepers have indicated they will have to restrict operations somewhat because of lack of skilled labor. Package bee and queen producers in all sections have been sold out for some time. A portion of this heavy demand for package bees and queens will be used for strengthening or replacing colonies among commercial beekeepers, but a very large proportion will go to small beekeepers, many of whom are just beginning. Shipment of package bees has already begun from the extreme South to southern areas. The final output of package bees and queens will largely depend on the availability of skilled labor.

While demand for honey has shown a sharp decrease during recent weeks, largely because of increased quantities of lower priced sirups, little honey remains in the hands of beekeepers. On the other hand, many retailers and wholesalers are well stocked with honey and many packers have indicated that with the present demand supplies which they now have on hand will carry them through to the new crop season. About the only sales by beekeepers reported in any section were of small lots, mostly to nearby consumers and retailers. In general ceiling prices prevailed on both honey and beeswax.

Monthly Report of Honey Producers

Date Rec. Mar.	State	Name	1 1943 Hold over	2	3 To Grocers Ex. Comb	4 To Consumers Ex. Comb	5 Move-ment	6 Cond. honey	7 Cond. plant	8 Percent colo-nies	8 Percent win-ter loss
11	B. C.	(A. W. Finlay)	0				Rapid	100	100	15	
11	S-Calif.	(L. L. Andrews)	0				Fair	100	90	3	
13	S-Calif.	(Geo. Larinan)	0				Rapid	100	100		
11	SE-Colo.	(Otis E. Adcock)	0				Fair	100	100	2	
6	E-Conn.	Allen Latham)	0				Slow		100		
10	S-Fla.	(C. C. Cook)	0				Fair	100	120	5	
13	C-Fla.	(Harry Hewitt)	0				Rapid	100	100	0	
6	SE-Ga.	J. J. Wilder	0					100	100	5	
6	S-Ills.	(Carl E. Killion)	0				Rapid	75	75		
7	NC-Ind.	(T. C. Johnson)	0		6.00	.35	Fair	90	100	3	
7	NW-Ind.	(E. S. Miller)	0				Fair	90	100		
11	W-Iowa	(E. G. Brown)	0				Rapid	50	100		
6	N-Mich.	(Ira D. Bartlett)	0				Fair	100	100		
8	E-Mich.	(L. S. Griggs)	0			.30	Fair	80	100		
13	S-Mich.	(Floyd Markham)	0				Slow	80	100		
13	C-Mich.	(E. D. Townsend)	0				None	80	100		
8	W-Minn.	(B. L. Morehouse	0				Fair	80	90	3	
8	S-Minn.	(J. F. Garner)	0					100	100		
14	C-Nebr.	(J. H. Wagner)	0			.29	Fair	90	90	4	
13	W-Nev.	(Geo. C. Schweis)	0				Fair	75			
10	W-N.M	(C. A. Baltzley)	0			.40	Fair	100	100	5	
8	NW-N. Y.	(Geo. B. Howe)	0			.30	Fair	90			
10	NW-N. C.	(C. S. Baumgarner)					Slow	100	75	50	
10	SE-N. C.	(W. J. Martin)	0				Fair	100	100	5	
6	E-N. D.	(M. W. Cousineau)					None		95		
6	C-Ohio	(R. D. Hiatt)	0				Fair	90	100		
6	NE-Okla.	(C. F. Stiles)					Fair	90	85		
8	C-Penn.	(Harry Beaver)	0				Slow				
9	W-S. C.	(E. S. Prevost)	0				Fair	85	80	6	
8	C-Tenn.	(J. M. Buchanan)	0				Fair	100	90		
9	E-Tenn.	(W. L. Walling)	0				Fair	100	90	0	
8	S-Texas	(C. G. Mayes)	10				Rapid	80	90	5	
10	S-Texas	(H. B. Parks)	0				Rapid	100		1	
8	S-Va.	(T. C. Asher)	0		4.50	.35	Fair	100	95	2	
7	SE-Wisc.	(M. E. France)					Slow				
9	N-Wyo.	(Earl C. Reed)	0				Fair	75	100	5	

KELLEY—"The Bee Man"

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Boyd, Wisconsin

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